

Case-Based Questions

Global Health

Lecture 1 : Primary Health Care

A rural village is experiencing a rise in preventable diarrheal diseases. A local health team organizes hygiene education sessions, ensures access to clean water, and works with community leaders. Which component of PHC is most exemplified here?

- A) Treatment
- B) Disease prevention and health promotion**
- C) Rehabilitation
- D) Palliative care

Answer: B

A 52-year-old woman is diagnosed with type 2 diabetes. She receives counseling on diet and exercise, is prescribed metformin, and later develops neuropathy requiring physical therapy. She continues to be monitored regularly by her local health team. Which of the following best explains how this scenario reflects the PHC principle of continuity of care?

- A)** It shows the importance of hospital-level interventions for chronic illness
- B)** It reflects consistent and coordinated care across prevention, treatment, and rehabilitation
- C)** It demonstrates that specialized tertiary care is always required for chronic disease
- D)** It highlights the inefficiency of PHC in managing non-communicable diseases

Answer: B

A government deploys mobile clinics in underserved urban slums to provide immunizations, chronic disease screening, and prenatal services. Data shows these interventions reduce health gaps between urban poor and wealthy populations. Which of the following most accurately describes how this intervention aligns with PHC principles?

- A) It supports centralized hospital-based service delivery**
- B) It promotes market-driven healthcare policies**
- C) It targets underserved populations to reduce health inequities**
- D) It focuses solely on curative aspects of care**

Answer: C

A 65-year-old stroke survivor is discharged from a hospital and starts physiotherapy sessions at a local community center. Which PHC component is demonstrated in this case?

- A) Health promotion
- B) Treatment
- C) Rehabilitation
- D) Disease prevention

Answer: C

A 68-year-old patient with advanced cancer receives regular home visits from a PHC team providing pain management, emotional support, and caregiver counseling. What core PHC value is best demonstrated in this approach to care?

- A) Exclusive focus on terminal treatment in hospitals**
- B) Emphasis on specialist care over generalist care**
- C) Isolation of chronic patients from community health services**
- D) Integration of palliative care within community-level services**

Answer: D

A local PHC center runs regular screening camps for hypertension and educates people on lifestyle modification. This activity reflects which part of the PHC continuum?

- A) Rehabilitation**
- B) Intersectoral collaboration**
- C) Health promotion and disease prevention**
- D) Palliative care**

Answer: C

A national health policy is revised to ensure that marginalized populations —such as refugees, people with disabilities, and ethnic minorities— receive the same access to essential health services as the general population. Community health committees are formed to allow public input in healthcare planning and service delivery. Which PHC principle is most strongly reflected in this approach?

- A) Emphasis on hospital-centered care and specialized services**
- B) Prioritization of economic efficiency over public engagement**
- C) Commitment to social justice, equity, participation, and universal health rights**
- D) Focus on curative treatment without preventive services**

Answer: C

A 30-year-old woman with gallstones is referred by a local clinic to a district hospital where she undergoes laparoscopic cholecystectomy. This case represents which level of health care?

- A) Primary healthcare**
- B) Secondary healthcare**
- C) Tertiary healthcare**
- D) Preventive care**

Answer: B

A patient with heart failure is referred from a district hospital to a university hospital where he undergoes specialized imaging and receives advanced cardiac intervention by a cardiologist. Which level of healthcare is primarily involved here?

- A) Primary healthcare**
- B) Secondary healthcare**
- C) Tertiary healthcare**
- D) Community-based care**

Answer: C

A medical student rotates in a university hospital where patients receive organ transplants, and advanced cancer therapy is provided. Which characteristic most accurately reflects the function of this facility?

- A) First contact with the health system
- B) Curative services at the district level
- C) Preventive and promotional care
- D) Tertiary healthcare including teaching and super-specialist services

Answer: D

A 50-year-old man visits his local health center for a routine check-up and is diagnosed with hypertension. He is counseled on lifestyle changes and given first-line medication. Which level of healthcare is being utilized in this scenario?

- A) Tertiary healthcare
- B) Secondary healthcare
- C) Primary healthcare
- D) Emergency care

Answer: C

A PHC team identifies a high prevalence of leishmaniasis in a desert area and coordinates with environmental and municipal authorities to control sandfly breeding grounds. Which PHC principle and basic element are best represented in this approach?

- A) Intersectoral collaboration and control of endemic diseases**
- B) Health promotion and nutrition education**
- C) Technology use**
- D) Immunization coverage**

Answer: A

Village health workers deliver regular health education sessions on disease prevention and sanitation at local gathering spots, without needing central approval for each activity. Which PHC principle and element are being implemented here?

- A) Accessibility
- B) Equity and essential drugs
- C) Decentralization
- D) Intersectoral collaboration

Answer: C

A PHC center implements a digital stock system to track availability of essential medicines, preventing stockouts and ensuring constant access. What guiding principle and basic element of PHC does this reflect?

- A) Decentralization
- B) Appropriate technology use
- C) Public participation and nutrition promotion
- D) Accessibility

Answer: B

A public health campaign involves schools, religious leaders, media, and healthcare workers to reduce tobacco use. What core PHC principle is this case most consistent with?

- A) Intersectoral collaboration**
- B) Curative services**
- C) Private health system reliance**
- D) Specialty care emphasis**

Answer: A

A diabetic patient visits a PHC center but is told insulin is out of stock and no glucometers are available. This scenario represents a failure in which PHC requirement?

- A) Accountability**
- B) Availability**
- C) Accessibility**
- D) Affordabilit**

Answer: B

A village has one PHC nurse who also manages paperwork, sanitation monitoring, immunizations, and deliveries. What aspect of PHC is primarily compromised in this case?

- A) Adequacy**
- B) Affordability**
- C) Acceptability**
- D) Comprehensiveness**

Answer: A

An elderly woman with arthritis must walk 12 km to reach the nearest health post. This case highlights a gap in which PHC requirement?

- A) Appropriateness
- B) Accessibility**
- C) Continuity
- D) Comprehensiveness

Answer: B

An urban clinic hires only male doctors. Female patients from a nearby cultural group stop attending due to discomfort. Which PHC principle is being violated?

- A) Affordability
- B) Acceptability**
- C) Assessability
- D) Completeness

Answer: B

A low-income family stops seeking care for their child's asthma due to high consultation and medication costs at the PHC facility. Which PHC principle is compromised here?

- A) Accountability
- B) Appropriateness
- C) Affordability
- D) Adequacy

Answer: C

**A PHC program collects no feedback or performance data.
Community members cannot report errors or service issues.
Which requirement of PHC is not being met?**

- A) Assessability**
- B) Accountability**
- C) Accessibility**
- D) Availability**

Answer: A

Several patients die due to expired medications at a PHC center, but no investigation or action is taken. This case shows a failure in which PHC principle?

- A) Accountability**
- B) Assessability**
- C) Affordability**
- D) Completeness**

Answer: A

A PHC record system lacks documentation for immunizations and antenatal visits. Staff often guess when services were last given. This failure is due to lack of:

- A) Continuity**
- B) Completeness**
- C) Appropriateness**
- D) Adequacy**

Answer: B

A PHC center provides only curative services and offers no health education, nutrition advice, or preventive screenings. Which essential component is missing?

- A) Continuity**
- B) Comprehensiveness**
- C) Accessibility**
- D) Accountability**

Answer: B

A child treated for malnutrition at a health post is discharged, but there is no follow-up or referral, and the condition recurs. Which aspect of PHC delivery is lacking?

- A) Continuity**
- B) Appropriateness**
- C) Accessibility**
- D) Affordability**

Answer: A

A PHC clinic in a conservative rural area refuses to provide adolescent reproductive health education, citing cultural norms, despite rising teen pregnancy rates. Which best explains why this PHC service is failing in terms of “appropriateness”?

- A) It doesn't use high-tech equipment
- B) It avoids controversy to maintain local peace
- C) It does not tailor services to the health needs of the target population
- D) It provides care only through hospitals

Answer: C

Before designing a rural health program, the Ministry of Health holds town hall meetings to gather feedback from the local population about their health needs and service preferences. Which Alma-Ata principle is being implemented?

- A) Centralized health planning
- B) Private-sector-only delivery
- C) Community participation
- D) Focus on curative care

Answer: C

A health initiative focuses on training multipurpose community health workers in basic prevention, health education, and first-line treatments. This is most aligned with which Alma-Ata goal?

- A) Establishing tertiary hospitals
- B) Expanding urban medical schools
- C) Strengthening community-based preventive care
- D) Encouraging secondary health insurance

Answer: C

An elderly woman is isolated despite access to clinics. Her mental health deteriorates. Which social determinant is most relevant?

- A) Age**
- B) Community and family support**
- C) Health insurance status**
- D) Gender**

Answer: B

Lecture 2 : Epidemiological Transition

A country with 27% of its population over age 60 reports increased demand for long-term care services, with high prevalence of hypertension and type 2 diabetes. Which of the following trends best explains this observation?

- A) Epidemiologic transition toward non-communicable diseases
- B) Increase in fertility and communicable disease outbreaks
- C) Decrease in life expectancy and youth dependency
- D) Expansion of pediatric healthcare services

Answer: A

In 2050, 80% of older adults are expected to live in low- and middle-income countries (LMICs). What is the most urgent planning consideration for these countries?

- A) Increase emergency surgical units
- B) Strengthen school immunization programs
- C) Expand preventive and primary care services
- D) Reduce retirement age

Answer: C

A global health planner emphasizes strengthening PHC systems to prepare for aging populations. Which rationale best supports this strategy?

- A) PHC reduces the need for emergency surgery in elderly**
- B) PHC focuses on infectious disease control**
- C) PHC can prevent or delay age-related chronic diseases**
- D) PHC prevents age-related infertility**

Answer: C

A developing country shows high birth rates and falling death rates. Life expectancy is increasing, and the population is growing rapidly. Which stage of the demographic transition is this country in?

- A) Stage 1**
- B) Stage 2**
- C) Stage 4**
- D) Stage 5**

Answer: B

A developed country has low birth and death rates, with declining population growth and an aging society. Which stage of the DTM does this best represent?

- A) Stage 3
- B) Stage 4
- C) Stage 2
- D) Stage 1

Answer: B

Country X has moderate population growth with increasing urbanization, declining fertility, and expanding education for women. What stage is this country likely in?

- A) Stage 2**
- B) Stage 3**
- C) Stage 4**
- D) Stage 5**

Answer: B

Country Y has shifted from high mortality due to infectious diseases to rising rates of cardiovascular disease and cancer. What does this change represent?

- A) Demographic stagnation
- B) Epidemiologic transition
- C) Industrial reversal
- D) Post-pandemic regression

Answer: B

Which organization is primarily responsible for classifying countries into income groups such as low-income, middle-income, and high-income?

- A) United Nations**
- B) International Monetary Fund (IMF)**
- C) World Health Organization (WHO)**
- D) World Bank**

Answer: D

A city in a low-middle income country has recently seen an unexpected surge in cholera cases. Despite improvements in sanitation infrastructure over the past decade, urban slums persist where migrant populations reside. Waterborne diseases have resurged. Which stage of the epidemiologic transition is most consistent with this scenario, and what factors are driving the reemergence of this disease?

- A) Stage I – Pestilence and Famine**
- B) Stage II – Receding Pandemics**
- C) Stage V – Reemergence of Infectious Diseases**
- D) Stage IV – Delayed Degenerative Diseases**

Answer: C

In a high-income European country, medical advances have significantly delayed the onset of death from chronic diseases, yet obesity and metabolic syndrome are on the rise among all age groups. Which of the following statements best explains this phenomenon?

- A)** The country is in Stage III of the epidemiologic transition
- B)** The shift from infectious to degenerative diseases is incomplete
- C)** Medical technologies have eradicated all forms of disease
- D)** The success in extending life has led to lifestyle diseases associated with excess

Answer: D

A new respiratory virus emerges in a densely populated city and spreads globally within three months, despite early containment efforts. The strain mutates rapidly and exhibits resistance to antiviral drugs. What epidemiologic mechanisms explain this rapid global transmission? (More than one answer is correct)

- A) Evolution of the pathogen**
- B) Global air travel and migration**
- C) High rural-urban fertility ratios**
- D) Poor nutrition and sanitation in refugee camps**

Answer: A&B

Analysis of historical records reveals that the population of Europe declined by over 25 million between 1347–1350 due to an epidemic spread by fleas on rats. Which stage of the epidemiologic transition does this event represent?

- A) Stage I – Pestilence and Famine
- B) Stage II – Receding Pandemics
- C) Stage III – Degenerative Diseases
- D) Stage V – Reemergence of Infectious Diseases

Answer: A

Lecture 3 : Mental Health

A 17-year-old male athlete starts skipping school and isolating from friends after a sports injury. Which aspect of the health triangle is most affected?

- A) Physical health**
- B) Social health**
- C) Emotional health**
- D) All three aspects**

Answer: D

A WHO report highlights that over 300 million people are affected by a particular mental disorder. What disorder is being referred to?

- A) Schizophrenia**
- B) Bipolar disorder**
- C) Anxiety**
- D) Depression**

Answer: D

All of the following are classifications used by the World Bank based on Gross National Income, except:

- A) Low-income countries
- B) Lower-middle-income countries
- C) Developing countries
- D) High-income countries
- E) Upper-middle-income countries

Answer: C

In a war-torn country, the Ministry of Health is trying to rebuild its primary healthcare system. Physical trauma and infectious diseases are being prioritized, but mental health services are nearly non-existent. A community survey reveals high rates of PTSD, depression, and anxiety—especially among women and children. Despite this, funding agencies focus solely on maternal and child mortality metrics. Which of the following best illustrates the long-term consequence of excluding mental health from essential healthcare services in this context?

- A) Lower maternal mortality rates but increased hospital utilization
- B) Improved physical recovery but increased absenteeism in schools and workplaces
- C) Enhanced vaccination coverage but poor treatment outcomes for chronic diseases
- D) Short-term cost saving but perpetuation of intergenerational trauma and poverty

Answer:D

A mental health facility has trained staff and enough beds, but patients report long wait times, rude behavior from staff, and early discharge before stabilization. Follow-up shows high relapse rates and complaints about incorrect diagnoses. Leadership is aware but lacks a data system to monitor performance. According to the Donabedian model, what type of quality failure are present?

- A) Structural problems only**
- B) Process and outcome problems**
- C) Only outcome problems**
- D) Access issues due to stigma**

Answer: B

A district hospital has no licensed psychologist, one general physician, and a nurse trained only in physical health. There is no private room for counseling, and psychiatric medications are inconsistently available. Which Donabedian domain is most compromised in this scenario?

- A) Structure**
- B) Process**
- C) Outcome**
- D) Access**

Answer: A

A rural district launches a telepsychiatry service to reach remote populations. High-speed internet and secure video platforms are installed. Also, providers are trained. What domain(s) of the Donabedian framework are being strengthened in this case?

- A) Structure only
- B) Structure and Process
- C) Process and Outcome
- D) Structure, Process, and Outcome

Answer: B

A national quality initiative requires mental health clinics to track key indicators like suicide rates, relapse rates, patient satisfaction, and return to work. These are published annually to guide reforms. What Donabedian domain does this monitoring system focus on?

- A) Structure**
- B) Process**
- C) Outcome**
- D) Governance**

Answer: C

Layla, a 24-year-old with a history of bipolar disorder, graduates with distinction in psychology. Despite her qualifications, she struggles to find work. Employers often lose interest after she discloses her condition during interviews. She withdraws from job-seeking and stops socializing with peers. She lives with her parents and avoids discussing her mental health due to fear of being judged. What is the most accurate interpretation of Layla's situation in the context of social exclusion and mental health?

- A) Layla's unemployment is a direct result of her psychiatric symptoms
- B) The issue is a mismatch between Layla's education and labor market demand
- C) Structural stigma and anticipated discrimination are limiting her social capital
- D) Layla's condition should be kept confidential to improve her job prospects

Answer: C

In a conservative society, men who show emotional distress are viewed as weak. Tariq, a university student with depression, avoids therapy for fear of being seen as “unmanly.” When he misses classes, his professors accuse him of laziness. His peers distance themselves, and his family urges him to “toughen up.” Which of the following best explains Tariq’s social isolation?

- A) Process failure in psychiatric evaluation
- B) Cultural stigma leading to suppressed mental health help-seeking and loss of social capital
- C) Poor adherence to antidepressants
- D) Lack of transportation to mental health clinics

Answer: C

Lecture 4 | Part 1 : Health System

A middle-income country is piloting a new healthcare purchasing mechanism. Under the old model, hospitals were given fixed budgets regardless of performance. Under the new system, they will be reimbursed based on the number and quality of services provided. This transition is supported by improved digital health data systems. This transition reflects a reform in which core health system function?

- A) Revenue collection
- B) Pooling of resources
- C) Resource allocation and purchasing
- D) Service delivery

Answer: C

A country has excellent hospitals in big cities, but in small towns and villages, many people have no doctors or emergency care. Pregnant women often have to travel hours to deliver safely. Which problem does this show in the performance of the health system?

- A) Poor use of new technologies
- B) Weak stewardship
- C) Lack of equity (fairness)
- D) Bad health worker training

Answer: C

The government gave local clinics the power to buy medicines. But now many clinics have expired drugs or are out of stock. Patients complain, and the media blames the Ministry of Health. Which part of the health system function is weak here?

- A) Stewardship (oversight)
- B) Financing
- C) Health worker training
- D) Patient responsiveness

Answer: A

A low-income country gets 45% of its healthcare budget from international donors. Recently, several donors withdrew their funding. This caused many health programs to shut down. What is the most vulnerable part of this country's health financing system in this case?

- A) Pooling
- B) Revenue Collection
- C) Resource Allocation
- D) Service Provision

Answer: B

A country introduces a national health insurance system where workers pay a monthly amount. The money is collected into a national pool. The government uses this money to pay for treatment of any member who becomes ill. What is the main purpose of this pooling system?

- A) To charge sick people more than healthy people**
- B) To reduce costs for rich people**
- C) To spread financial risk across the population**
- D) To collect more taxes**

Answer: C

A government collects and pools money properly. However, it signs expensive contracts with private hospitals without checking the quality or cost of care. As a result, money is wasted and poor patients do not get good care. Which part of the financing system is weak here?

- A) Revenue Collection
- B) Pooling
- C) Resource Allocation and Purchasing
- D) Regulation

Answer: C

A hospital treats a simple cold with an expensive imported drug, although cheaper, equally effective medicine is available. Patients are happy, but the budget is quickly used up. Which type of efficiency is mostly missing?

- A) Technical Efficiency**
- B) Clinical Efficiency**
- C) Allocative Efficiency**
- D) Economic Efficiency**

Answer: D

In a region, doctors often request MRI scans for simple headaches. These don't change the treatment plan, and resources are taken away from more urgent services. Which type of efficiency is lacking most here?

- A) Human Efficiency
- B) Technical Efficiency
- C) Economic Efficiency
- D) Allocative Efficiency

Answer: D

The health ministry builds five new hospitals in rural areas. But most people prefer traditional healers and don't use the new hospitals. What efficiency is missing here?

- A) Technical Efficiency
- B) Allocative Efficiency
- C) Economic Efficiency
- D) Therapeutic Efficiency

Answer: B

A community health worker gives health education. While the outcomes are good, each session takes 2 hours, even though the same message could be delivered in 30 minutes. Which efficiency should be improved?

- A) Allocative**
- B) Technical**
- C) Economic**
- D) Financial**

Answer: B

A country considers two vaccines for a virus:

- **Vaccine A: Costs \$10 per person, prevents 1 DALY per 2 people**
- **Vaccine B: Costs \$20 per person, prevents 1 DALY per person**

Which vaccine is more cost-effective?

- A) Vaccine A**
- B) Vaccine B**
- C) Both are equal**
- D) Cost-effectiveness does not apply here**

Answer: B

A woman in a low-income country needs urgent surgery. She has no insurance and must sell belongings to pay. Which financing method failed to protect her?

- A) Government pooling
- B) Private insurance
- C) Out-of-pocket payment
- D) Prepayment system

Answer: C

Two treatments for diabetes:

- **Drug A costs \$500/year, adds 1 QALY per patient**
- **Drug B costs \$1,500/year, adds 1.5 QALYs**

Which is more cost-effective?

- A) Drug A**
- B) Drug B**
- C) They are equal**
- D) Cannot tell**

Answer: A

A Ministry of Health must choose between two kidney disease programs:

- **Dialysis: Helps 1,000 patients, costs \$10M**
- **Prevention: Reduces future cases, helps 10,000 people, costs \$5M**

What tool should be used to decide which to fund?

- A) Cost–Benefit Analysis
- B) Cost–Effectiveness Analysis
- C) Budget Impact Study
- D) Randomized Control Trial

Answer: B

Country A provides healthcare through government-run hospitals. People don't pay at the point of service. Costs are controlled by the government. Country B uses mostly private doctors and hospitals, but everyone must have insurance from non-profit "sickness funds" paid by employers and employees. Which health system models are used in Country A and Country B, respectively?

- A) Country A – Bismarck; Country B – Beveridge
- B) Country A – Beveridge; Country B – Bismarck
- C) Country A – NHI; Country B – Mixed
- D) Country A – Mixed; Country B – Bismarck

Answer: B

A country uses mostly private doctors and hospitals, but the government collects money through taxes and uses it to pay for health care. Everyone is covered under a single public insurance system. Services are good, but people sometimes wait months for surgery. Which model does this country most likely use?

- A) Beveridge Model**
- B) Bismarck Model**
- C) National Health Insurance Model**
- D) Mixed System**

Answer: C

In Egypt, public clinics exist but are underfunded. Most people rely on private clinics and pay out-of-pocket. The government cannot fully control or regulate private providers. Health outcomes are poor, especially for the poor. Which type of health system is this an example of?

- A) Beveridge model
- B) Bismarck model
- C) National Health Insurance model
- D) Mixed system

Answer: D

Germany's healthcare system uses over 200 insurance groups called "sickness funds," funded by employers and employees. Canada uses private doctors, but the government pays all bills through a single system. Which of the following is TRUE?

- A) Germany follows the Beveridge model; Canada follows the Bismarck model**
- B) Germany follows the Bismarck model; Canada follows the NHI model**
- C) Both Germany and Canada follow the NHI model**
- D) Canada has a Mixed system; Germany has a Beveridge system**

Answer: B

Lecture 4 | Part 2 : Universal Health Coverage (UHC)

A country wants to improve its health system using the UHC approach. What is the best first step it should take to make sure the reforms work well?

- A) Focus on hospitals in big cities first**
- B) Begin with services for rich people, then expand**
- C) Use facts and research to choose which services to provide**
- D) Buy expensive machines for all health centers**

Answer: C

A low-income country has decided to expand health coverage to rural areas. The Ministry of Health is planning to launch a primary care system that focuses on preventive services, especially for mothers and children. However, the system lacks a clear referral pathway and many providers are private. What is the main risk if the country does not organize a proper referral system?

- A) Increased cost of care in urban hospitals**
- B) More health workers joining the private sector**
- C) Lack of medical equipment in rural clinics**
- D) Patients will stay longer in hospitals**

Answer: A

Lecture 5 : Environmental Health

A 3-year-old child living near an industrial zone in a developing country is brought to the emergency department with neurological symptoms. Blood tests confirm elevated lead levels. Other children in the area, including a 9-year-old sibling, have lower levels despite similar proximity. Which of the following BEST explains the variation in clinical presentation between the two siblings?

- A) The cumulative exposure from air pollution over time
- B) Differences in socio-economic status between the two children
- C) Differences in individual susceptibility related to developmental stage
- D) The threshold dose of lead for the older sibling has not yet been reached

Answer: C

A community near a battery recycling facility shows increased incidence of kidney dysfunction and neurological symptoms after 10 months of living near the plant. Blood tests show bioaccumulation of cadmium and lead. This scenario MOST appropriately reflects which category of exposure?

- A) Acute**
- B) Sub-acute**
- C) Sub-chronic**
- D) Chronic**

Answer: D

A power plant is built in a low-income, predominantly Indigenous community. The area experiences increased asthma and cancer rates, yet public consultations were held only in English and via internet platforms inaccessible to many locals. Which principle of Environmental Justice has been MOST violated?

- A) Evidence-based policy development
- B) Equitable participation in environmental decision-making
- C) Efficient industrial development
- D) Public–private partnership collaboration

Answer: B

In a rapidly industrializing region, a chemical plant releases heavy metals into a river used by a nearby rural community for drinking water and agriculture. The company denies responsibility and government regulators have delayed response for over 2 years. What should be the FIRST step in applying the Environmental Justice process to this situation?

- A) Evacuate the community
- B) Share international toxicology data
- C) Identify the hazard producer and empower the community
- D) Calculate DALYs lost in the population

Answer: C

A refugee camp is established near an old military storage site. Years later, children show signs of neurodevelopmental delay. Investigation reveals chronic exposure to persistent organic pollutants (POPs), but authorities delay action due to lack of precise source identification. This case illustrates a challenge to EJ related to:

- A) Legal enforcement of hazard controls**
- B) Ethical conflict between risk and benefit**
- C) Environmental racism**
- D) Burden of proof (visible) and data gaps**

Answer: D

Lecture 6 : Climate Change and global warming

A city recently experienced a record-breaking heatwave, causing increased hospital visits due to heatstroke. The government introduced shaded bus stops, increased green spaces, and distributed cooling kits to low-income families. Which of the following best describes the city's main climate strategy?

- A) Mitigation only
- B) Adaptation only
- C) Both mitigation and adaptation
- D) None of the above

Answer: B

These actions (shaded stops, green spaces for cooling, cooling kits) help people cope with the effects of heat, not prevent the cause

A country switches all public buses to electric vehicles powered by solar energy. However, they do not invest in cooling systems for bus stations despite rising temperatures. This country's climate action focuses mainly on:

- A) Adaptation**
- B) Mitigation**
- C) Resilience**
- D) Groundwater conservation**

Answer: B

A farming community faces repeated droughts. They install underground tanks to collect rainwater, plant drought-resistant crops, and limit water use during dry months. Which climate strategy best describes the overall approach?

- A) Mitigation
- B) Adaptation
- C) Resilience
- D) Condensation control

Answer: C

They are adapting to water shortage and reducing future risks (limiting water use) — this is resilience

In a large forest region, deforestation reduces plant cover. Scientists observe a drop in humidity and less cloud formation above the area. Which water cycle process is most likely being reduced?

- A) Precipitation
- B) Snowmelt runoff
- C) Groundwater storage
- D) Transpiration

Answer: D

Trees release water vapor. Fewer trees = less transpiration = less moisture in the air

In a hot summer, a country experiences massive wildfires and heavy traffic congestion. Environmental agencies record a sharp rise in carbon dioxide levels in the atmosphere. Which two major sources are likely responsible for the rise in CO₂?

- A) Forest fires and trees anabolism
- B) Forest fires and fossil fuel combustion
- C) Road dust and ocean spray
- D) Fertilizer use and coal mining

Answer: B

Burning wood (wildfires) and gasoline (traffic) both release CO₂

Two countries argue about reducing fossil fuel use. One says CO₂ is the only dangerous gas. The other says methane and nitrous oxide are worse. Which is correct about the global warming potential (GWP) of methane and nitrous oxide?

- A) Methane and nitrous oxide have higher GWP than CO₂**
- B) They are safe and have no effect on climate**
- C) CO₂ has higher GWP than all other gases**
- D) Only CO₂ contributes to the greenhouse effect**

Answer: A

A farming region is found to have high levels of nitrous oxide in the air. The farmers there use nitrogen-rich fertilizers every season. What is the likely link between the fertilizers and N₂O emissions?

- A) Fertilizers slow down carbon release
- B) Fertilizers evaporate quickly into methane
- C) Soil bacteria break down nitrogen and release nitrous oxide
- D) Fertilizers stop condensation

Answer: C

In a tropical country, farmers flood rice fields to grow crops. Scientists detect a rise in methane gas during the growing season. Why do flooded fields increase methane levels?

- A) They increase wind erosion
- B) They warm the upper atmosphere
- C) They allow microbes to release methane during decomposition
- D) They increase evaporation of CO₂

Answer: C

Lecture 7 : HIV

A 24-year-old man presents with fever, sore throat, and rash. He says he had injected drugs 2 weeks ago. The rapid HIV antibody test is negative. Which of the following is the BEST explanation for the negative test result?

- A) He has natural immunity to HIV
- B) The test is faulty
- C) He is in the window period and antibodies are not yet detectable
- D) HIV is only detectable after symptoms disappear

Answer: C

A teacher tells students that HIV can spread by sharing food or water with someone infected. What is the MOST accurate correction to this statement?

- A) HIV can only spread through air droplets**
- B) HIV spreads only through mosquito bites**
- C) HIV does not spread through food, water, or casual contact**
- D) HIV is mainly spread through hugging and touching**

Answer: C

In 2022, a country reports that 86% of people living with HIV know their status, 89% of those are on treatment, and 93% of those are virally suppressed. How close is this country to achieving the target in 2025?

- A) They exceeded all targets
- B) They will achieve the second and third targets but not the first
- C) They achieved only the first target
- D) They are far from achieving any target

Answer: B

A nurse accidentally pricks her finger with a used needle after giving an injection to an HIV-positive patient. She immediately reports it. What is the BEST next step to reduce her risk of infection?

- A) Wait a week to see if symptoms appear**
- B) No treatment is necessary if the wound is small**
- C) Remove infected blood as soon as possible**
- D) Start post-exposure prophylaxis (PEP) within 72 hours**

Answer: D

A 28-year-old man uses an HIV self-test at home. It gives a negative result. He had high-risk exposure 5 days earlier. He assumes he's safe. What is the BEST advice for him?

- A) No need to retest; he's not infected**
- B) He should immediately start lifelong ART**
- C) He should retest by a health worker**
- D) He must report his result to the MOH**

Answer: C

Lecture 8 : Malaria

A 4-year-old child from Nigeria (in West Africa) arrives at a clinic with fever and chills. Malaria is suspected. Which malaria parasite is most likely responsible?

- A) Plasmodium vivax
- B) Plasmodium malariae
- C) Plasmodium falciparum
- D) Plasmodium ovale

Answer: C

A pregnant woman in a malaria-endemic area is offered medication to prevent malaria. This is an example of:

- A) Vector control
- B) Intermittent preventive treatment (IPTp)**
- C) Case management
- D) Chemotherapy to prevent from cancer

Answer: B

A health worker provides long-lasting insecticide-treated nets (ITNs) in a rural village. What kind of prevention is this?

- A) Vaccination
- B) Preventive chemotherapy
- C) Vector control
- D) Symptom management

Answer: C

A person was given artemisinin-based combination therapy (ACT), but their symptoms got worse. What might be happening?

- A) They were vaccinated**
- B) They developed malaria immunity**
- C) They might have drug-resistant malaria**
- D) They were bitten by a non-infected mosquito**

Answer: C

What is the main goal of malaria elimination?

- A) Reduce mosquito population
- B) Vaccinate all children
- C) Stop local malaria transmission
- D) Give free medicine to tourists

Answer: C

Lecture 9 : SDGs

During the COVID-19 pandemic, Fatima lives in a low-income country where she could not receive her regular treatment for diabetes because the hospital was full of COVID-19 patients. Many other patients with chronic diseases faced the same problem. Which SDG was most directly affected in this situation?

- A) SDG 4 – Quality Education
- B) SDG 3 – Good Health and Well-being
- C) SDG 13 – Climate Action
- D) SDG 5 – Gender Equality

Answer: B

Ali is a 10-year-old boy who used to get a free nutritious meal at school every day. During the COVID-19 lockdown, his school closed, and he no longer received that meal, affecting his health and growth. Which two Sustainable Development Goals (SDGs) are most involved in this situation?

- A) SDG 1 – No Poverty & SDG 13 – Climate Action**
- B) SDG 4 – Quality Education & SDG 6 – Clean Water and Sanitation**
- C) SDG 2 – Zero Hunger & SDG 4 – Quality Education**
- D) SDG 3 – Good Health & Well-being and SDG 14 – Life Below Water**

Answer: C

During COVID-19 lockdowns, fewer people used cars or factories, and the air in many big cities became cleaner. Scientists noticed a drop in pollution and CO₂ emissions. Which SDG benefited most from this unexpected change?

- A) SDG 1 – No Poverty
- B) SDG 5 – Gender Equality
- C) SDG 13 – Climate Action
- D) SDG 8 – Decent Work and Economic Growth

Answer: C

Please let us know if anything is missing

لا إله إلا الله وحده لا شريك له ، له الملك وله الحمد وهو على كل شيء قدير

اللهم احفظ وطننا الأردنّ وأدم علينا نعمة الأمن والأمان ، ووفق أجهزتنا
الأمنية وسدد خطاهم ، وانصر إخواننا المستضعفين في غزة وسائر بقاع
الأرض ، وارفع عنهم الظلم ، وارزقهم النصر والثبات