PBH 203: SUMMARY NOTES 1

PHC: Prevention and control of common locally endemic communicable diseases

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Epidemiology

- Terminologies for better understanding
- Definition: Epidemiology is the study of epidemics
- It is the study of disease distribution, frequency, determinants, deterrents etc and the use of suck knowledge towards disease prevention and control
- Distribution: in terms of person, place and time
- Frequencies: numbers- incidence, prevalence rates
- Incidence rate I=no of new cases in a stated period per population at risk X1000
- Prevalence rate P=no of current cases at a specified time per population at risk X1000
- P=ID

Principles cont.....

- Epidemiology: CD and NCDs
- CDs are characterized by existence of a living infectious agent which is transmissible.
- 2 other factors: the host and the environment
- Agent-Host-Environment= Epidemiological triad
- Concept of risk factors is less pronounced
- Some disease are just emerging, some re-emerging
- CDs are of high concerns to the world, most especially developing nation

Infectious agents

- Viruses Helminthes Bacterial:
- Parasitic Fungal
- In order to survive, the agent must be able to multiply, emerge from the host, reach a new host, infect the host
- Reservoir of infection= specific ecological niche upon which the agent depends for survival. It could be human, animal or non living thing.
- The agent lives and multiply in the reservoir from which it is transmitted to other habitats(no definite survival here0

Epid. methods cont....

- Human: can be ill persons or carriers e.g measles, Aids, meningitis etc OR Carrier e.g AIDs
- Animal reservoir; zoonotic diseases-disease of vertebrate animal which are transmissible to man under natural conditions
  - Human use the animal as food: taeniasis
  - As vector: plague(fleas)
  - Through animal bites(rabies)
  - Through animal contamination e.g typhoid
- Non Living: C tetani and C welchii i(gas gangrene(in soil; and water supply, milk in the case of S. typhi

Epid. methods cont....

- Source of infection- person or object from which the infectious agents passes to a host
- Route of transmission;
  - contact e.g STIs
  - Skin penetration: hookworm, schisto, malaria, plague etc
  - Airborne: poor ventilation, overcrowding,
  - GIT: faeco-oral: hand, food or water
  - Transplacental: syphilis, AIDs, toxoplasmosis
- Concepts
  - Incubation period
  - Risk factors

General principles of prevention and control

- Eliminate the Infective agents
- Interrupt transmission of diseases
- Reduce host susceptibility
- Public Health have achieved so much in Cd control e.g
  - Eradication of small pox
  - Near elimination of poliomyelitis, guinea worm and other diseases
  - Containment of 2014 EVD outbreak in West Africa
- Epidemiological transition is an emerging factor in CD control.

Describing a communicable disease

- Occurrence
- Organism
- Reservoir
- Transmission
- Prevalence
- Specific microbiology of the disease
- incubation period
- Symptoms
- Diagnosis
- Prevention and control

Microbiology

- Parasitology including protozoan and helminthic infection
- Mycology
- Bacteriology
- Virology
- Immunology/molecular biology

Refer to your lectures on the above subjects as it relates to the listed microorganisms

Diseases transmitted through GIT

- Virus: poliomyelitis, HBV, coxackie viruses, echo and rota viruses
- Bacterial: Enteric fevers, cholera, Food poisoning- staph, salmonella and clostridia, gastroenteritis- E coli, shigella,
- Protozoal: Amoebiasis (E histolytica), toxoplasmosis(T Gondi), Giardiasis
- Helminths: Ascariasis (AL), Trichuriasis, Taeniasis, Drancontiasis (D medinensis- guinea worm)

Prevention and control

- Infective agent: sanitary disposal of faeces, elimination of human and animal reservoirs
- Route of transmission: provide safe water, protect food from contamination, control flies and good personal hygiene, food handlers, food preservation, raw food products,
- Host: specific immunization, chemoprophylaxis and specific treatments

Skin and mucous membrane

- Viral: Chicken pox, VHF e.g Lassa fever, AIDs
  Small pox used to be in this category
- Protozoal: trichomoniasis
- Bacterial; Gonnorhhoea, syphillis, leprosy
- Fungal; candidiasis, superficial fungal infections
- Arthropod: scabies
- Indirect or Others: rabies9animal bites), infected soli(hookworm)- AD or NA, water(schisto0, wounds(tetanus) and Schistosomiasis (Schistosoma spp)

Skin/mucous membrane

- Infective agents: eliminate reservoir by case findings,
- Route of trasnmission: personal hygiene, eliminate overcrowding, avoid sexual promiscuity
- Host; specific immunization, chemotherapy or chemoprophylaxis
- Use HIV as an example and share the rest among students

Respiratory tract

- Viral: MMR, influenza, ARI by rhino or reo viruses
- Bacterial: TB, pneumonia by Staph or strep, H influenza
- Meningitis
- Strep pneumonia
- Diphtheria
- Whooping cough
- Fungal:” Histoplasmosis: H capsulatum

Respiratory tract

- Trasnmission: air hygiene, good ventilation, nutrition, good housing, Vit A supp (measles)
- Route: cough/sneeze- large particle or droplet, droplet nuclei and then dust
- Infective agent: eliminate human/animal reservoir , disinfect floors and eliminate dust
- Avoid overcrowding, personal hygiene- avoid coughing
- Host: specific immunization, chemotherapy, chemoprophylaxis e.g INH
- Use TB as example

Arthropod borne

- Virus: yellow fever, dengue fever,
- Bacterial: Plague,
- Protozoan: Malaria, trypanosomiasis
- Helminthes: filariasis, W bancrofti, Loa loa, Bruga malayi, Onchocerchiasis

Prevention and control

- Infective agent: destroy animal reservoir e.g rats in control of plague; isolation and treatment of cases eg yellow fever
- Transmission: vector control- integrated
- Host; immunization and chemoprophylaxis
- Use malaria as example

Assignment/group work

- Group 1: GIT Disease: cholera, salmonellosis, Guineaworm and Taeniasis
- Group 2: Skin/mucous membrane disease: Chickenpox, Lassa fever, Syphilis and rabies
- Group 3: respiratory tract: Measles, pneumonia, meningitis and Diphtheria/pertussis
- Group 4: arthropod borne disease: yellow fever, Plague, onchocerchiasis and filariasis

Describe the epidemiology and prevention and control of above diseases as it relates to PHCs in Nigeria.