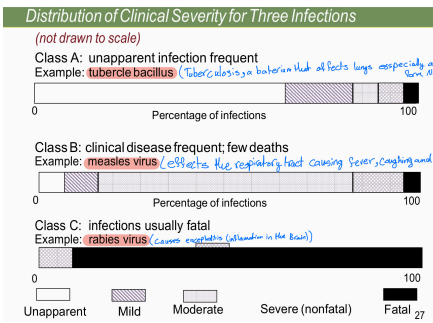
- Chronic diseases: The Pathogen harbors for several months and years after the initial infection, Ex: Hepatitis B, Salamonella Typhi (causes Typhoid fever)
  - Typhoid Mary

- Distribution of Clinical severity:
  - Frequently Unapperaut Infection: Tubercle Bacillus
  - Frequently Clinical Disease: Measles Disease
  - Frequently Fatal Disease: Rabies Disease



- Distribution of disease according to their Reservoir:
  - Human: STDs, Measles, Mumps, Streptococcal infections, respiratory diseases and SmallPox.
  - Animals (Part B): Plague (Rodents), Anthrax (sheep), Rabies (Bats, Dog, Racoons and other Mammals), Trichinellosis (swine: pigs), Brucellosis (cows, pigs)

  New disease that are thought to have an animal reservoir: HIV (Aids), Ebola, Sars

  - Environment:

    Soil: Clostriduim Botulinum (Main source of infection: immproperly canned Food), Histoplasma Fungi (causes Histoplasmosis)

    Water: Legionella pneumophila

- Portal of Exit (How does the pathogen exit the Host to reach another susceptible one)
  - Respiratory system: Influenza, Myobacterium Tubercelosis (Tubercle Bacillus)
  - Urine: Schistosomes
  - Feces: Cholera
  - Skin Lesions: Scabiei

- Blood-Borne Agents → Crossing the Placenta (From Mother to Fetus): Rubella, Syphilis, Toxoplasmosis
  → Cuts or Needles: Hepatitis B
  → Through Blood sucking insects: Malaria

- Transmission of infection from Mother to child is either → Vertical Transmission (Just before or after birth + via placenta or Breast Milk), Ex: HIV, Hepatitis C
  → Horizontal, Ex: All other regular ways of Transmission

- Portal of Entry: The portal which the pathogen will enter the sucsiptible host through, it should allow access to the Host's Tissue, and is usually the same as the exit portal in the source host.

- Portals of entry include: → Skin (Hookworms)
  → Mucous Membrane (Syphilis)
  → Blood (Hepatitis B, HIV)

- Modes of Transmission:

- Direct Transmission (Person to Person): Influenza, Hepatitis A

- Indirect Transmission: → Air-Borne (Through Dust and Droplet Nuclei) → Measles
  → Vehicle-Borne → Food: Clostriduim botulinum, E-Coli / Water: Hepatitis A, E-Coli / Fomites: Tooth Brush, toys... / Biolgical products (Blood)
  → Vector-Borne → By: Mosquitoes, Fleas, Lice and Ticks either by → Mechanical Means → legs and wings of these insects
  Biological Means → Supports the growth of the Pathogen (Malaria)

- The Susceptibility of the Host depends on → Genetic Factors (Ex: Sickle cell disease lowers the chance of getting Malaria)
  → Specific immunity (Formation of Anti-bodies by immune system)
  → Non-Specific Factors - Non specific immunity - (Skin, Mucous Membrane, Cough reflex ...)

- The Knowledge of the Portals of Entry and exit help develop Control measures, these Control Measures Target the Segment of the infection chain that is Susciptible for Intervention, Isolation is an example on an intervention that targets the Mode of Transmission (Ex: Covid-19)

- Herd Immunity: Lowers the chance of the pathogen from encountering a susceptible Host, Ex: → Measles (94%)
  → Mumps (90%)
  → Polio (80%)

- Requirments that should be available in a disease to be dealt with through Herd Immunity:
  1- Single-Host species 2- Direct Transmission 3- Solid Immunity → (infection immunises the Host)