Epidemiological Triangle

- Three main contributors to disease occurrence
  - Agent
  - Host
  - Environment
Epidemiologically Significant Infectious Diseases

- Foodborne
  - Botulism
  - Food poisoning; Clostridium
  - Salmonella
  - Shigellosis Food poisoning
  - Staphylococcal disease
  - Traveler’s disease
  - Trichinosis
More Infectious Diseases

- Water and Foodborne
  - Amebuasus
  - Cholera
  - Giardiasis
  - Legionellosis

- Vaccine Preventable
  - Chickenpox
  - Diptheria
  - Measels
  - Mumps
  - Polio
  - Tetanus
More Infectious Diseases

- Sexually Transmitted
  - AIDS
  - Gonorrhea
  - Syphilis
  - Chlamydia
More Infectious Diseases

- Person to person
  - Aseptic meningitis
  - Viral hepatitis
  - Respiratory infections
  - Herpes simplex
  - Streptococcal
  - Tuberculosis
  - Leprosy
More Infectious Diseases

- Arthropod borne
  - Encephalitis
  - Lyme disease
  - Malaria
  - Plague
  - Rocky Mountain Spotted Fever
More Infectious Diseases

- Zoonotic
  - Psittacosis
  - Q Fever
  - Rabies

- Fungal
  - Coccidiomycosis
  - Candidiasis
Microbial Agents

- Bacteria
  - Leading killers in 19th century
  - Improvements with antibiotics
  - Still leading cause of illness
  - TB, salmonella, strep
  - Antibiotic resistance
Microbial Agents

- **Viruses**
  - Viral hepatitis A, herpes simplex, influenza, viral meningitis
  - Q fever, Rocky mountain spotted fever

- **Mycoses (Fungus)**
  - San Joaquin Valley fever
  - Blastomycosis
  - Ringworm
  - Athletes Foot
  - Candidiasis
Microbial Agents

- Protozoa
  - Malaria
  - Amebiasis
  - Giardiasis
Microbial Agents

- Helminths
  - Moist tropical areas
  - Intestinal parasites: roundworms, ascariasis, pinworms, tapeworms, trichinellosis, schistosoma
Microbial Agents

- Arthropods
  - Insect vectors that carry disease agent to humans
  - Mosquitoes, ticks, flies, mites
  - Malaria, encephalitis
Characteristics of Infectious Disease Agents

- Infectivity:
  - Capacity of agent to enter and multiply in host and produce infection or disease
  - Polio and measles have high infectivity
Characteristics of Infectious Disease Agents

- Pathogenicity:
  - Capacity of disease to cause disease in infected host
  - Measles is high; polio is low
Characteristics of Infectious Disease Agents

- Virulence
  - Severity of disease
  - Rabies is always fatal is extremely virulent
Characteristics of Infectious Disease Agents

- **Toxigenicity**
  - Capacity of agent to produce toxin or poison
  - Botulism and shellfish poisoning

- **Resistance**
  - Ability of agent to survive adverse environmental conditions
  - Hepatitis is very resistant; influenza is fragile