



VirTra – Virtual Interactive Coursework Training Academy™ (V-VICTA™)

***INFECTIOUS DISEASES***

**VirTra**



# OVERVIEW



- Introduction to Infectious Diseases
- Causes
- Transmission
- Risk Factors
- Prevention
- COVID-19
- Hepatitis A
- Hepatitis B
- Hepatitis C
- HIV
- Tuberculosis
- Conclusion

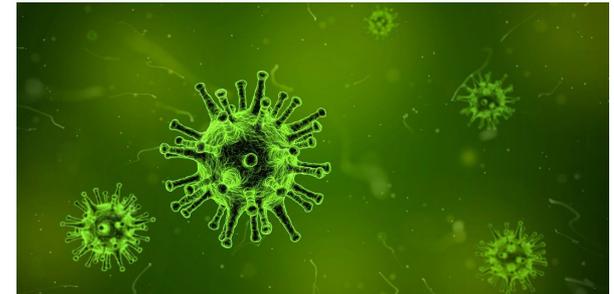


# INFECTIOUS DISEASES

## Introduction to Infectious Diseases



- Infectious diseases are caused by specific organisms such as:
  - Bacteria
  - Viruses
  - Fungi
  - Parasites
- Some can be transferred by:
  - Insects or animals
  - Contaminated food or water
  - Being exposed to certain organisms in the environment



# INTRO TO INFECTIOUS DISEASES



- Signs and symptoms of infectious diseases vary depending on the types of organisms.
- Some infections respond to rest and home remedies, yet others may require hospitalization.
- Infectious diseases may be prevented by:
  - Hand washing
  - Personal protective equipment
  - Vaccines



# INFECTIOUS DISEASES

## Causes



- Bacteria: Single-celled organisms that thrive in many environments.
  - Can live in extreme cold or heat
  - Some bacteria is beneficial, such as the type that lives in our intestines to help digest food
- Most bacteria cannot harm people, but there are exceptions:
  - Strep throat
  - Tuberculosis
  - MRSA
  - Food poisoning
- While antibiotics can help, inappropriate use has helped create bacteria resistant to some antibiotic treatments.



- Smaller than bacteria, viruses require living hosts to grow and survive.
- When a virus enters the body, it invades cells and redirects them to produce more of the virus.
- Some common viral infections include:
  - Chickenpox
  - Common cold
  - COVID-19
- It can sometimes be hard to tell if symptoms are caused by a virus or bacteria. Some can be caused by both, such as:
  - Diarrhea
  - Pneumonia
  - Meningitis



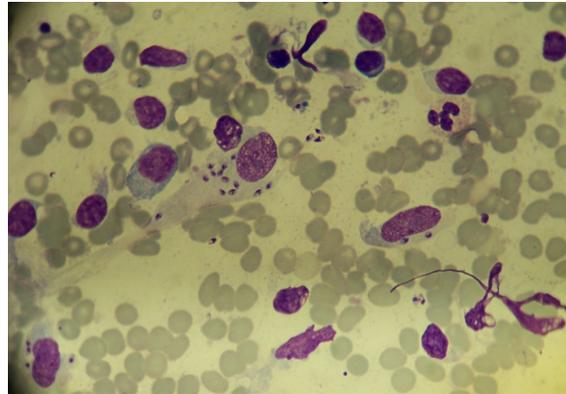
- According to the CDC, fungi can be found outdoors on plants or indoors on surfaces and in the air.
- Many skin diseases are caused by fungi, such as ringworm and athlete's foot.
- Some fungal infections target your lungs or nervous system.



# PARASITES



- Parasites are microscopic living organisms that require a host in order to live and sustain themselves.
- Parasites can be transmitted through bug bites (causing diseases such as Malaria) or animal feces.





# INFECTIOUS DISEASES

## Transmission

# DIRECT CONTACT



- Person to person
  - When an individual with an infection touches, breathes, coughs or sneezes on an uninfected person.
  - May also spread through bodily fluid.
  - A person infected may not always have symptoms.
- Animal to person
  - Being bitten or scratched by an infected animal, or handling its waste.
- Mother to unborn child
  - A pregnant woman may pass germs to an unborn baby.

# INDIRECT CONTACT



- Insect bites
  - Some germs rely on insect carriers to move from one host to another. Mosquitos carry West Nile Virus and ticks carry Lyme Disease.
- Food contamination
  - Germs can be present in undercooked meat or unpasteurized juice.





# INFECTIOUS DISEASES

## Risk Factors

# RISK FACTORS



- You may be more likely to contract an infectious disease if your immune system is not working properly.
- Reasons for a compromised immune system include:
  - Use of steroids or other medicine that suppress the immune system
  - Working in an unsanitary environment and/or without clean water
  - Certain conditions that may predispose you to infection (malnutrition, old age, etc.)
  - You are not wearing your PPE correctly



# INFECTIOUS DISEASES

## Prevention

# TIPS TO DECREASE THE RISK OF INFECTION



- Wear PPE properly.
  - Gloves, face masks and eye protection
- Avoid touching your eyes, nose or mouth.
- Get vaccinated, if possible.
  - First responders are recommended to get a Tetanus and Hepatitis B vaccine
- Stay home when ill – especially if you experience vomiting or a fever.
  - You may be putting others at risk of infection

# TIPS TO DECREASE THE RISK OF INFECTION



- Don't share personal items.
  - Use your own pen, flashlight and other hand-held gear
- Wash your hands frequently and properly:
  - Wet your hands with clean water and apply soap
  - Lather your hands thoroughly and scrub for at least 20 seconds
  - Rinse your hands under clean water
  - Dry your hands with a clean towel or air dryer





# INFECTIOUS DISEASES

## COVID-19



- COVID-19, also called Coronavirus, is a respiratory virus that began in China in late 2019.
- In 2020, COVID-19 was officially declared a pandemic by the World Health Organization (WHO).
- COVID-19 mainly spreads from person to person through respiratory droplets.
  - Less commonly, COVID-19 can also be spread from touching surfaces with the virus lingering on it.



# COVID-19 PREVENTION



- Wear a mask, gloves and eye protection while conducting law enforcement duties.
- Keep at least 6 ft (2 m) of distance from others.
- Wash your hands with soap and water for at least 20 seconds, or use an alcohol-based hand sanitizer.
- Avoid touching your eyes, nose and mouth
- Clean and disinfect surfaces you often touch on a daily basis.

# COVID-19 INFECTION & EXPOSURE



- If you develop symptoms or have been exposed to COVID-19, contact a doctor.
  - Call ahead so health providers can take steps to ensure others are not exposed.
- To avoid spreading the virus:
  - Stay home except to get medical care
  - Avoid public transportation and ride-sharing
  - Wear a face mask around others
  - Isolate yourself from others at home, use a separate bedroom and bathroom
  - Avoid sharing dishes, glasses, bedding and other items



# INFECTIOUS DISEASES

## Hepatitis A

# HEPATITIS A



- Hep A is a virus that infects liver cells, causing inflammation.
  - The inflammation can affect how your liver works, causing other symptoms.
- Hep A commonly spreads when a person eats or drinks something contaminated with feces from an infected person.
- Exposure is rare for first responders, but it is possible for food to have been tampered with or prepared by someone with the virus.

# HEPATITIS A SYMPTOMS



- Fever
- Malaise
- Loss of appetite
- Diarrhea
- Nausea
- Abdominal discomfort
- Dark-colored urine
- Jaundice (yellowing of the skin and whites of the eyes)

# HEPATITIS A PREVENTION



- Hep A is commonly found in people experiencing homelessness, were recently incarcerated or travelled to high risk countries.
  - Foodborne Hep A outbreaks are relatively uncommon in the U.S.
- To minimize risk, always assume that in all contacts with subjects, the individual is infected.
- Take precautions when in contact with bodily fluids
- Use PPE and wash hands thoroughly whenever touching or exposed to bodily fluids.

# HEPATITIS A INFECTION & EXPOSURE



- While there is no specific treatment for Hep A, an immune globulin shot may be effective if given within 14 days of exposure.
- Depending on symptoms, hospitalization may be required.
- To prevent further spread if infected:
  - Get plenty of rest and stay home while isolating from others
  - Wash your hands thoroughly and frequently
  - Avoid sharing dishes, cups, utensils, etc.
  - Make follow-up appointments with your doctor