Topic 3 - Infection and Response Cheat Sheet

by Cheetography via cheatography.com/203278/cs/43304/

Viruses

Viruses are not cells

They are very small (about 1/100th the size of a bacterium)

They move into cells and replicate themselves using the cell's systems

This causes the cells to burst making you feel ill, releasing all of the copies into the bloodstream

Bacteria

Small prokaryotic cells

Multiply rapidly by **binary fission** in your body

Toxins are produced which causes you to feel unwell

Fungi

Can be single celled or have a body made of hyphae

Can produce spores which can be spread to other organisms

Protists

Some are parasitic meaning they use humans and snimals as their hosts

All eukaryotic and most are single celled

Reducing Spread of Disease

Improving Hygiene	Using simple hygiene measures can prevent the spread of disease. For example, doing thinhs like washing your hands thoroughly
Destroying Vectors	By taking precautions to remove vectors, you can prevent the disease from being passed on

Reducing Spread of Disease (cont)

Isolation	If you isolate someone with a communicable disease, it prevents them from passing it on to anyone else
Vaccin-ation	Vaccinating people and animals from communicable disease prevents them from developing the disease and passing it on

Spread of Pathogens

Direct Contact	touching contaminated surfaces
By Water	drinking or coming into contact with dirty water
By Air	pathogens can be carried in the air and then breathed in (droplet infection happened when sneeze droplets are inhaled)

HIV

Human Immunodeficiency Virus (HIV) can eventually lead to Acquired Immunodef-iciency Syndrome (AIDS)

Symptoms

- starts with flu-like illness and symptoms

- if untreated, can travel to lymph nodes and attack immune system cells

- can stay hidden for many years which is called AIDS

Spread

- direct sexual contact (eg unprotected sex)

- exchange of bodily fluids (eg blood through drug users sharing needles)

- mother to child during pregnancy, birth or breast feeding

Treatment and Prevention

- no cure but **antiretroviral drugs** used early can slow or halt the progress to AIDS

- using barrier methods of contraception to prevent spread

- not sharing needles or mixing blood

Gonorrohoea

Introd-uction:	- It's a sexually transmitted disease - In 2018, it was the cause of 13% of diagnosed STDs - Bacterial infection and had the largest increase in the UK
Symptoms:	- Thick yellow/green discharge from genitals - Can be asymptomatic - Can cause infertility, pelvic pain, ectopic pregnancies, blind babies
Spread:	- Unprotected sex

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Gonorrohoea (cont)

Treatment and Prevention:	- Barrier methods of contraception - can be treated with antibiotics but many strains are now becoming resistant to penicillin - tracing of all sexual partners in essential so all individuals can be treated and/or treated

Measles

- Measles is a highly contagious and potentialyl fatal viral infection.
- Most often seen in children so the majority of young children are vaccinated

Symptoms

- fever
- red skin and a rash
- can lead to blindness and brain damage in extremely severe cases

Spread

- inhalation of droplets from coughs and sneezes
- very infectious as these droplets can linger in the air/on surfaces

Treatment and Prevention

- no treatment so infected people must be isolated to stop spread
- greatly reduced in the UK due to improved living conditions and a vaccination programme for young children in place

Salmonella

- Salmonella food poisoning is spread by bacteria ingested in food or food which has been prepared in unhygienic conditions
- found in the gut of many different animals

Symptoms

- symptoms start between 8-72 hours after eating food
- generally doesn't last for more than a few days
- more serious in young children and the eldery due to dehydration
- fever
- vomiting
- diarrhoea
- abdominal cramps

Spread

- uncooked, contaminated food, including eggs and chicken
- bacteria can remain on surfaces for some time after so other foods can also get infected

Treatment and Prevention

- chickens in the UK are vaccinated for salmonella
- food should be cooked thoroughly
- hands should be washed before and after handling raw meat and other foods
- raw meat shouldn't be washed

Tobacco Mosaic Virus

Introduction:	- Tobacco Mosaic Virus (TMV) was the first virus to be isolated - Widespread plant pathogen which affects ~150 species of plant

Tobacco Mosaic Virus (cont)

Symptoms:	- Mosaic pattern leaf discolouration - Stunted growth due to lack of photosynthesis taking place
Spread:	- Plants in direct contact with an infected plant can also get the disease - This particular virus can remain in the soil for ~50 years
Treatment and Prevention:	- No treatment currently - Good field hygiene is the best method of control of TMV (this includes destroying any infected plants as soon as possible) - Gentically-modified TMV-resistant crops could be grown

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