

## SH1 - Harmful Microbes and Their Diseases Sheet

Methicillin Resistant *Staphylococcus aureus* (MRSA)

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| Infectious agent | Bacterium: *Staphylococcus aureus* |
| Symptoms | Asymptomatic in healthy individuals. Can cause skin infections, infect surgical wounds, the bloodstream, the lungs, or the urinary tract in previously ill patients. |
| Diagnosis | Swab and antibiotic sensitivity test. |
| Mortality rate | High – if not given the correct antibiotics. |
| Transmission | Contagious. Direct skin contact. |
| Prevention | Regular hand washing. |
| Treatment | Resistant to many antibiotics. While some antibiotics still work, MRSA is constantly adapting. |
| History | First reported 1961, increasing problem globally. |

Measles

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| Infectious agent | Virus: *Paramyxovirus* |
| Symptoms | Fever, runny nose, red and runny eyes, a cough, a red rash and a sore, swollen throat. |
| Diagnosis | Blood sample and antibody test. |
| Mortality rate | Low, but can be high in lower income countries, where treatment can be hard to access. |
| Transmission | Contagious. Droplets from coughs and sneezes, skin contact or contact with objects that have the live virus on them. |
| Prevention | Prevention via vaccination. |
| Treatment | Bed rest and fluid intake. |
| History | Virus first reported 1911, has decreased dramatically in high and middle income countries in recent years although small epidemics do occur. Still a pandemic  problem for low income countries. |



## SH2 - Harmful Microbes and Their Diseases Sheet

Flu

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| Infectious agent | Virus: *Influenza* |
| Symptoms | Headache, fever, chills, muscle aches; possibly sore throat, cough, chest pain. |
| Diagnosis | Blood sample and antibody test. |
| Mortality rate | Medium but higher in the very young and elderly. |
| Transmission | Highly contagious. Inhalation of viruses on airborne particles. Direct skin contact. |
| Prevention | Vaccination against current strains. |
| Treatment | Bed rest and fluid intake. Antivirals in the elderly. |
| History | Present for centuries, epidemics occur at regular intervals. |

Thrush

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| Infectious agent | Fungus: *Candida albicans* |
| Symptoms | Itching, burning, soreness and white coating of the mouth or irritation of the vagina with a whitish discharge. |
| Diagnosis | Swab, microscopic examination and culturing. |
| Mortality rate | None. |
| Transmission | Person to person contact but is a normal part of the flora of the gut. |
| Prevention | Symptoms are caused by overgrowth of this fungus due to antibiotics killing off the normal protective bacteria. Therefore avoid unnecessary antibiotic use. |
| Treatment | Antifungals |
| History | Almost 75% of all women have had this infection at least once. |



## SH3 - Harmful Microbes and Their Diseases Sheet

Chlamydia

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| Infectious agent | Bacterium: *Chlamydia trachomatis* |
| Symptoms | In many cases there are no symptoms but sometimes there is a discharge from the vagina or penis. Swollen testicles and inability to have children can also occur. |
| Diagnosis | Swab or urine sample for molecular testing. |
| Mortality rate | Rare |
| Transmission | Contagious through sexual contact. |
| Prevention | Use a condom during sexual intercourse. |
| Treatment | Antibiotics |
| History | First discovered in 1907. Global problem which is on the increase. |

Bacterial Meningitis

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| Infectious agent | Bacterium: *Neisseria meningitidis* |
| Symptoms | Headache, neck stiffness, high fever, irritability, delirium, rash. |
| Diagnosis | Spinal fluid sample and molecular testing. |
| Mortality rate | Medium – higher risk in the young and elderly. |
| Transmission | Contagious, through saliva and inhalation of droplets. |
| Prevention | Vaccination against many strains, avoid contact with infected patients. |
| Treatment | Penicillin, oxygen and fluids. |
| History | First identified as a bacteria in 1887. Regular epidemics in low income countries. |

HIV/AIDS

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| Infectious agent | Virus: *Human immunodeficiency virus* (HIV). |
| Symptoms | Failing immune system, pneumonia, lesions. |
| Diagnosis | Blood sample and antibody test. |
| Mortality rate | Medium – high in countries where access to HIV testing and anti-HIV drugs is limited. |



## SH4 - Harmful Microbes and Their Diseases Sheet

HIV/AIDS

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| Transmission | Highly contagious. Sexual contact, blood to blood contact, sharing of needles, mother to new born transmission. |
| Prevention | Always wear a condom during sexual intercourse. |
| Treatment | There is no cure although anti-HIV drugs can prolong life expectancy. |
| History | First identified in 1983. Currently a global epidemic. |

Glandular fever (Kissing Disease)

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| Infectious agent | Virus: *Epstein Barr* |
| Symptoms | Sore throats, swollen lymph glands, extreme tiredness. |
| Diagnosis | Blood sample and antibody test. |
| Mortality rate | Low |
| Transmission | Not very contagious. Direct contact such as kissing and sharing drinks. |
| Prevention | Avoid direct contact with infected patients. |
| Treatment | Bed rest and fluid intake, paracetamol can be used to relieve the pain. |
| History | First described in 1889, 95% population have had the infection, however, only 35% develop symptoms. Occasional isolated outbreaks. |

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| Infectious agent | Virus: *Varicella-zoster* |
| Symptoms | Blistering rash on the body and head. |
| Diagnosis | Blood sample and antibody test. |
| Mortality rate | Low |
| Transmission | Highly contagious. Direct skin contact or inhalation of droplets from sneezing and coughing. |
| Prevention | Prevention by vaccine. |
| Treatment | Bed rest and fluid intake, antivirals in some adult cases. |
| History | First identified in 1865. Decreased in countries where vaccination programmes have been implemented. No change elsewhere. |

Chickenpox