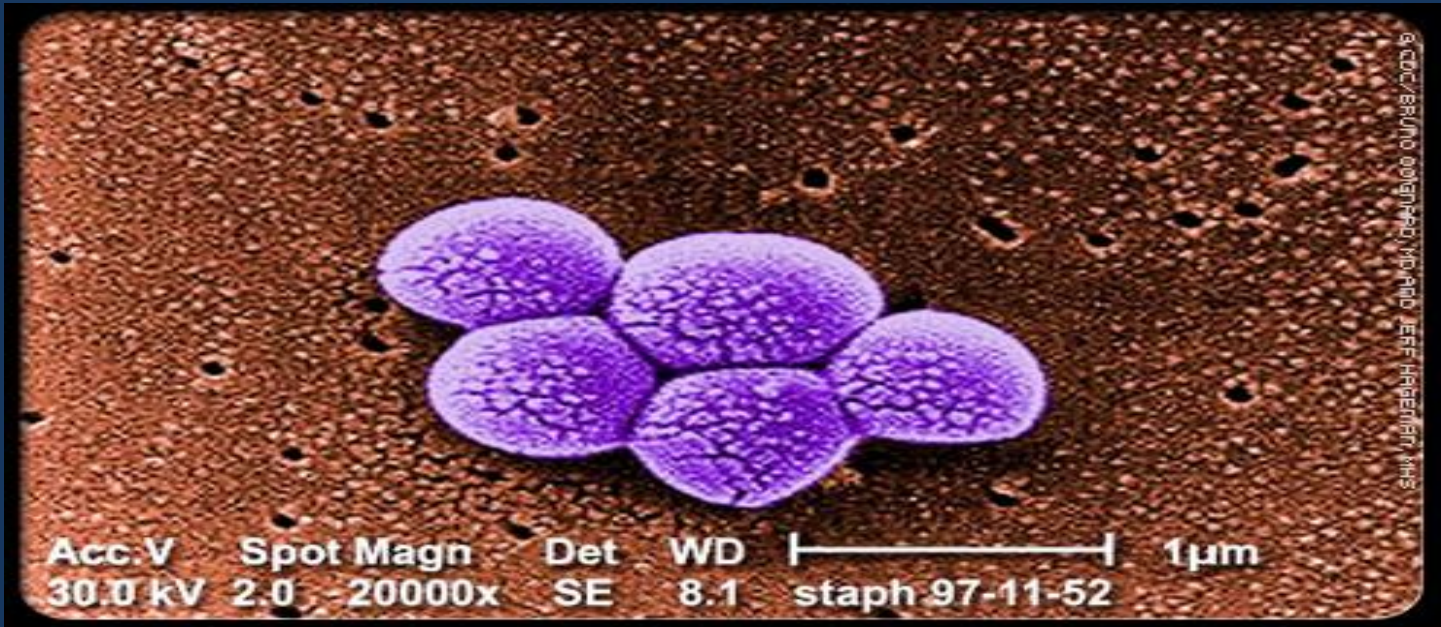


Infection Prevention and Control



Specific Diseases Guidance



Tuberculosis (TB)

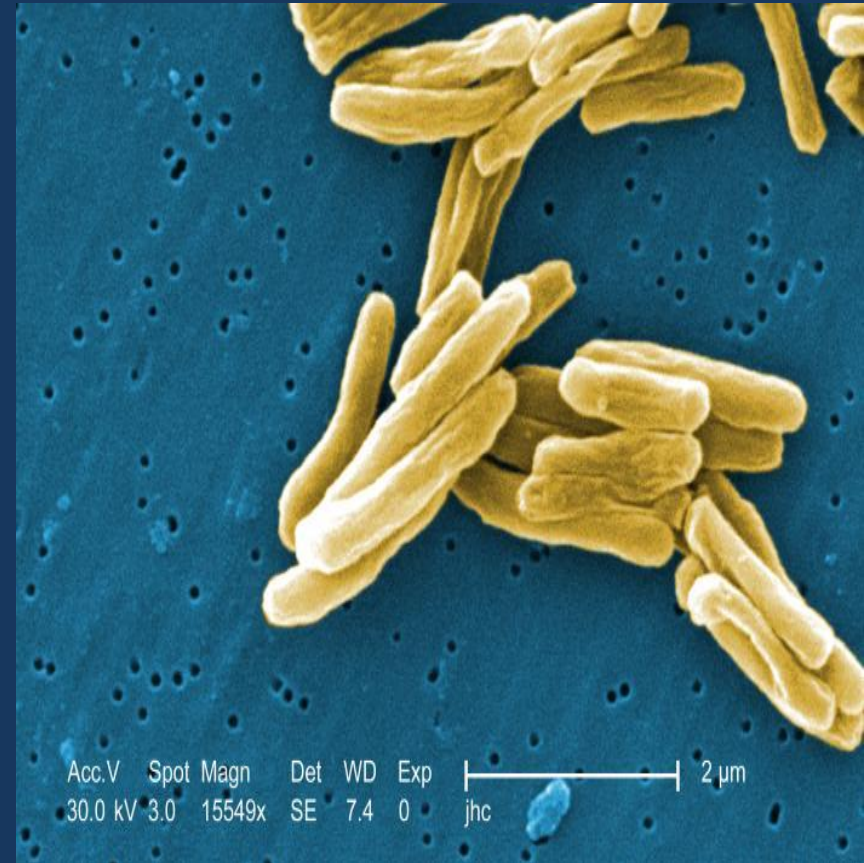
Infection of the lungs and/or other organs usually by *Mycobacterium tuberculosis*

Long incubation period

Latent disease

Without treatment can often be fatal

Over nine million new cases of TB and nearly two million deaths from TB are estimated to occur around the world every year





Tuberculosis (TB)

•Symptoms:

- » Fatigue
- » Fever
- » Night sweats
- » Weight loss
- » Cough
- » Haemoptysis

•Transmission:

- » Inhalation – coughing/sneezing
- » Ingestion (Bovine) - Rare
- » Direct transmission – cut/ inoculation – mortuary risk

•Acquisition:

- » Incubation period usually 3-8 weeks
- » Infectious all the time there is viable organisms in sputum
- » Usually requires prolonged exposure

•Prevention:

- » Early Identification and treatment
- » Contact tracing
- » Vaccination (BCG) – target approach

•Treatment

- » 3 x early morning sputum's for microscopy & culture
- » Test for drug resistance
- » Standard multidrug therapy
- » Most cases treated at home
- » All cases notified to HPA
- » Screen household contacts



Risk to Ambulance Staff

- How infectious is the case?
 - Sputum smear positive – infectious to any close contact
 - Smear negative, culture positive – possibly infectious to susceptible contacts
 - Sputum negative, bronchial washings positive – possible infectious to susceptible contacts
 - Three consecutive sputum negatives – not infectious
 - Two weeks appropriate treatment – not infectious
 - non pulmonary/laryngeal disease – not infectious
 - Children even if smear positive are less infectious than adults
- How great was the exposure?
 - Exposure to coughing/sneezing greatest risk
 - Prolonged or multiple indoor exposure usually needed
 - Aerosol generating procedures



Risk to Ambulance Staff

How susceptible is the contact?

- Susceptibility by age – neonates – very high, under 3 years – high
- BCG reduces risk by 50-80%
- Immunosuppressed – very high
- Severe malnutrition
- Drug misuse
- HMP in mates previous and present
- Diabetics, chronic renal failure

Therefore –

- Risk very low to ambulance staff
- Very unlikely for crews to spend 8 hours with patient
- If smear positive (or crew concerned) ask patient to wear a surgical mask
- **Remember if we consider crews to have been at risk then Public Health England will contact them!**

Scabies

Associated with overcrowding and poor personal hygiene

More prevalent in children and young adults in urban areas

In UK cases of scabies have increased since 1991

Outbreaks reported in hospitals and nursing homes





Scabies

•Symptoms

- No sign of infection for 2-4 weeks
- Rash – small red papules anywhere on body
- Intense itching – esp. at night
- Burrows may be seen in webs of fingers, wrists and elbows
- Often misdiagnosed



•Transmission

- Direct skin-to-skin contact
- Transmission higher in families
- Remains infectious until treated
- Crusted scabies – more infectious

•Prevention

- Early recognition of cases
- Prompt effective treatment

•Treatment

- Lotion applied all over body – leave on for 24 hours
- Repeat treatment one week
- Outbreak – everyone should be treated on same day



Risk to Ambulance Staff

- How infectious is the case?
 - Infectious until treated
 - Patients with crusted scabies more infectious
- How great was the exposure?
 - Skin to skin exposure for 10 minutes or more
 - How susceptible is the contact?
 - Affects all age groups but elderly & young susceptible
 - Therefore:
 - » If performing procedures that exposes staff - use universal precautions



Blood-borne Viruses

Transmission

Person to person by blood borne routes

- Sharing drug injecting equipment
- Blood transfusions
- Blood products
- Needlestick injuries
- Skin piercing
- Inadequately sterilised equipment
- Mother to baby
- Sexual intercourse

Prevention

- Blood products now screened
- Use universal precautions when dealing with blood and body fluids
- Prevent infected HCW performing EPP
- Promote safe sex
- Screening of pregnant women
- Vaccination
- Post exposure prophylaxis

Risk Of Health Care Workers Acquiring BBV

HIV - 0.3%

HBV - 20-40%

HCV - 2.7-10%

Following exposure to contaminated blood

Risk to Ambulance Staff

How infectious is the case?

High risk - All Patients infected with Hepatitis virus or HIV are infectious to others

How great was the exposure?

Direct exposure to blood and body fluids

Was there splashing onto open wounds/face

How susceptible is the contact?

Was PPE used?

Vaccination – protection against some groups

Therefore:

Risk moderate –high for ambulance staff

Crews performing procedures that expose them to blood and body fluids must wear appropriate PPE

All HCW should be vaccinated for Hepatitis B



Meningitis

Meningitis is the inflammation of the lining of the brain and spinal cord

Septicaemia – blood poisoning form of the disease

Two conditions have different symptoms and can occur separately or together

Caused by a variety of different organisms, Inc. bacteria, viruses and fungi – most common are meningococcal, pneumococcal & HIB





Meningococcal Meningitis

•Symptoms;

- Early symptoms usually non specific and are often mistaken as viral infection
- Fever
- Floppiness
- Malaise
- Headache
- Nausea/vomiting
- Photophobia
- Neck stiffness
- Petechial rash (not always present)
- With advancing disease – hypotension, collapse, pulmonary oedema, confusion, coma

•Transmission:

- Person-to-person through respiratory droplets and direct contact with nose & throat secretions
- Requires long prolonged close contact
- Acquisition:
 - Incubation period usually 3-5 days
 - No longer infectious following 24hrs of antibiotics
- Prevention:
 - Vaccination – serogroups A, C, W135 & Y



Risk to Ambulance Staff

- How infectious is the case?
 - Infectivity is relatively low – transmission requires long prolonged contact – household overnight or “wet” kissing
 - Transmission from patient to HCW has been documented – but rare!
- How great was the exposure?
 - Exposure to nasopharyngeal secretions?
 - Aerosol generating procedures
- How susceptible is the contact?
 - Susceptibility by age
 - Immunosuppressed - illness/treatment
 - Vaccination – protection against some serogroups



Risk to Ambulance Staff

- Therefore –
 - Risk very low to ambulance staff
 - Very unlikely for crews to spend prolonged time in confined space with patient – never overnight
 - If performing aerosol generating procedures – wear mask
 - Remember if we consider crews to have been at risk we will contact them –
 - No need for crews to have routine chemoprophylaxis



MRSA

- Methicillin-resistant staphylococcus aureus
- Staphylococcus aureus - common cause of infections from minor skin infections to life threatening septicaemia
- Gram positive organism - many subtypes
- Resistant strain – MRSA
- In UK levels of MRSA in hospitals has risen
- Approximately 42% of all S.aureus bacteraemias are associated with MRSA





MRSA

•Transmission:

- Direct contact
 - » hands
- Indirect contact
 - » Equipment
 - » Environment

•Acquisition:

- Incubation period 4-10 days
- Person remain infectious to others as long as the infection or carrier state persists

•Prevention:

- Screening for hospital admissions
- Use of universal precautions
- Isolation of patients in some hospital wards

•Treatment

- Decolonisation for carriers
- Treatment for infections
- Important to discuss with microbiologist



Risk to Ambulance Staff

- How infectious is the case?
 - Infectivity is relatively low – 30% population carry *S.aureus* as part of normal flora
- How great was the exposure?
 - Direct contact with secretions required
 - How susceptible is the contact?
 - Susceptibility by age
 - Immunosuppressed - illness/treatment
 - Therefore:
 - » Risk very low to ambulance staff
 - If performing procedures that exposes staff to secretions – use universal precautions
 - Wash your Hands



Norovirus

- Also known as small round structured viruses (SRSV) or Norwalk-like viruses
- Most common cause of gastroenteritis
- Generally mild illness
- Spread can be rapid – outbreaks common
- Approximately 3500 laboratory confirmed cases of norovirus infected reported annually in UK





Norovirus

•Symptoms

- Relatively mild illness lasting 12-60 hours
- Abdominal cramps
- Nausea/vomiting
- Diarrhoea
- Lethargy
- Headache
- Fever

•Transmission

- Person to person spread
- Faecal-oral route
- Indirect contact – equipment/environment
- Aerosol – vomit particles
- Cross contamination – food prep
- Contaminated foods – shellfish
- Contaminated water



Risk to Ambulance Staff

- How infectious is the case?
 - Infective dose extremely low – therefore easily spread
- How great was the exposure?
 - Exposure to virus particles – faeces or vomit
 - Aerosols can survive in environment for several days
- How susceptible is the contact?
 - Affects all age groups but elderly & very young susceptible
- Therefore:
 - Low risk to staff if they use universal precautions
 - Particularly important to ensure equipment and vehicle cleaned
 - Remember to inform hospital straight away so patient can be isolated

ANY
QUESTIONS
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