



UK Health
Security
Agency

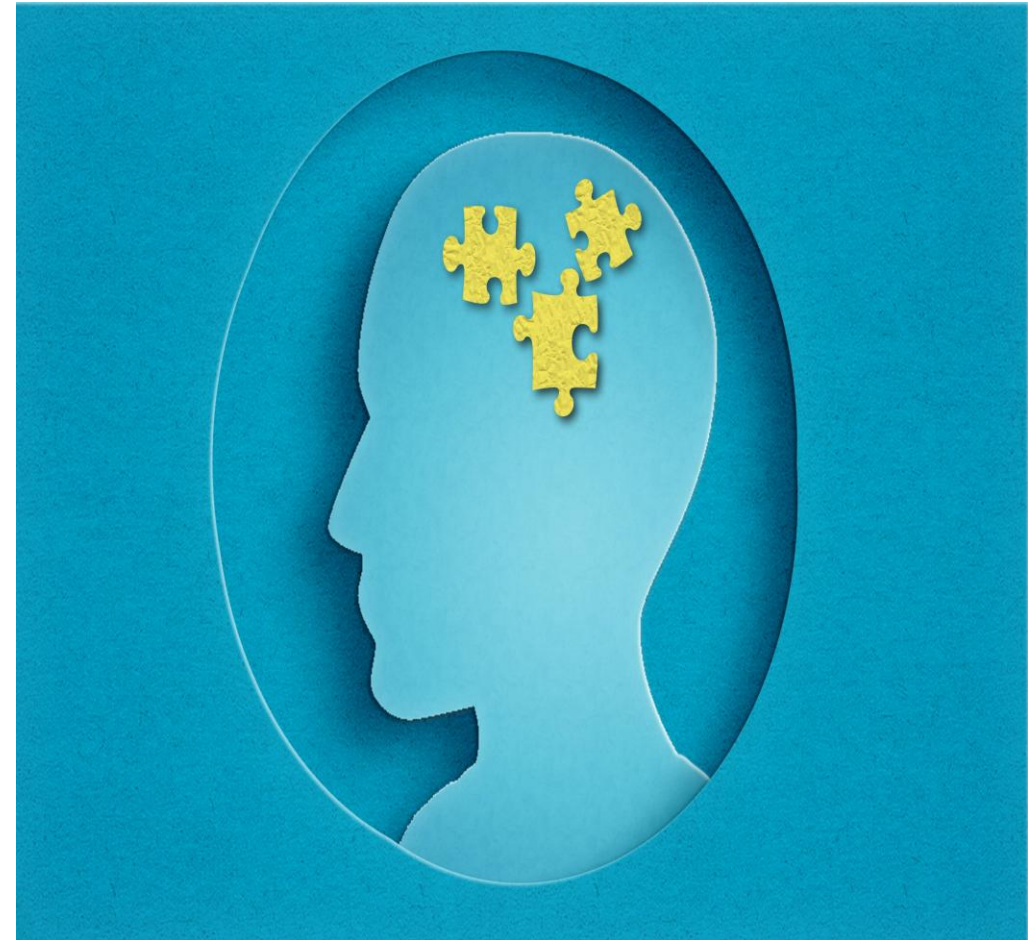
Tuberculosis (TB) – a brief introduction

Training for prison settings

Jessica Townsend
TB Nurse Health Protection Nurse
National TB Unit UKHSA

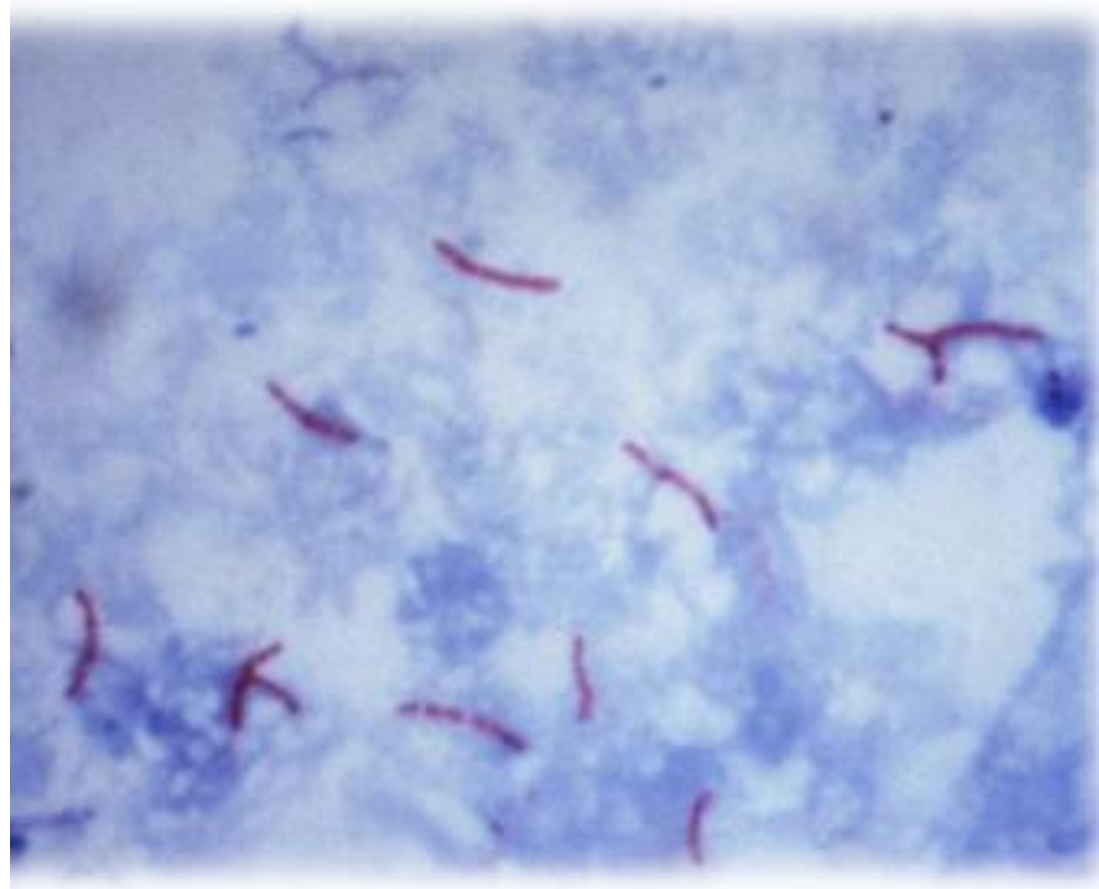
Aims of this presentation

- To understand what TB is
- To recognise the signs and symptoms of TB
- To understand the difference between active and latent TB
- To understand what happens when someone is diagnosed with TB
- To understand how you can protect yourself



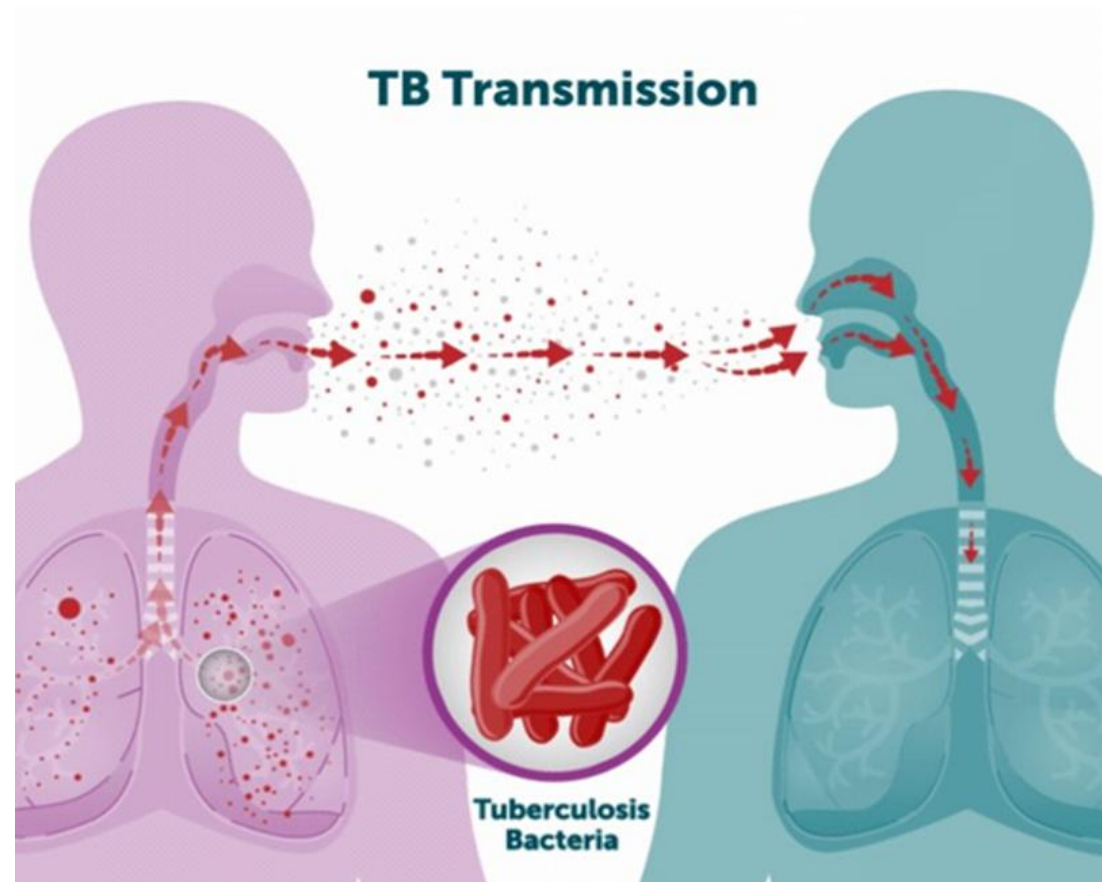
What is TB?

- TB is an infection caused by a bacteria called Mycobacterium Tuberculosis
- It is a serious condition, but **can be cured** with proper treatment
- It usually affects the lungs, but it can affect any part of the body (glands, bones, brain)
- Only TB of the lungs or voice box / throat is infectious



How is TB spread?

- TB is spread to others when a person with infectious TB coughs, talks, sings, laughs or sneezes by releasing small droplets containing the bacteria
- Anyone can get TB by breathing in the bacteria, but the risk of being infected is dependent on:
 - how infectious the person is
 - the environment
 - time spent with the individual
 - the health of the individual exposed



When you are exposed to TB

- immune system may destroy the infection

OR

- immune cells form a hard-shell walling off the infection, keeping the bacteria contained and under control – this is called **latent TB**

OR

- immune system fails to keep the bacteria under control, and it begins to multiply rapidly causing **active TB**

[The Truth About TB](#)



Clear



Latent TB

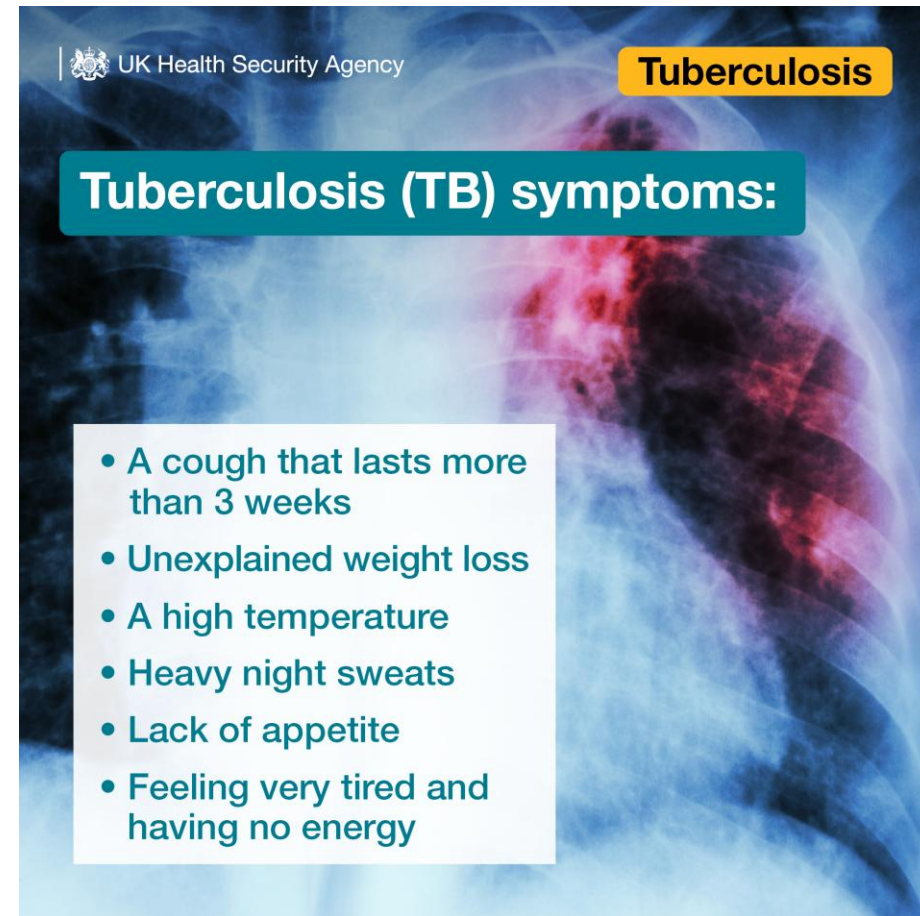


Active TB




What are the symptoms of active TB?

- A person could have some or all of these symptoms









What should I do if someone has these symptoms?

 UK Health Security Agency

Tuberculosis

Tuberculosis (TB) symptoms:

-  A cough that lasts more than 3 weeks
-  Unexplained weight loss
-  A high temperature
-  Heavy night sweats
-  Lack of appetite
-  Feeling very tired and having no energy



What is Active and Latent TB

Active TB

- Person may feel unwell
- The disease can be spread to others if it is in the lungs
- The individual may have abnormal chest x-ray or positive sputum sample
- The individual needs to have treatment for TB disease

Latent TB

- Person is well & has no symptoms
- The disease cannot be spread to others
- The individual has a normal chest x-ray
- The individual usually has a positive skin or blood test indicating previous exposure or infection
- The individual can be offered preventive treatment, but they do not have to take it

TB Treatment

Active TB treatment

- 4 antibiotics for 2 months followed by 2 antibiotics for 4 months
- Daily
- Usually non-infectious after a few weeks of treatment
- Completing the full course of treatment is the only way to cure TB.
- Failing to not take treatment as instructed can lead to resistance, re-infection and ongoing transmission to others

Latent TB treatment

- 2 antibiotics for 3 months
- OR
- 1 antibiotic for 6 months
 - Daily
 - Completing the full course of treatment will help prevent TB from become active
 - Treatment is encouraged but optional

What happens when a resident has TB?

- If TB is suspected the resident should be isolated in a single cell or may require hospitalisation
- Once a diagnosis of infectious TB is confirmed the prison healthcare team and the governors will work with the local health protection team to perform a risk assessment and decide who may have been exposed
- If it is required, then there will be a screening exercise (known as contact tracing) for the exposed staff and residents.



How can I protect myself?

Know the symptoms of TB and see a healthcare professional if you have them for more than 3 weeks

Wear the appropriate personal protective equipment (PPE) if you are looking after a resident with TB as advised by Healthcare and the local Health Protection Team

Attend screening appointments if they are offered / advised to you by Occupational Health or your Duty Governor

**If you have symptoms
of Tuberculosis (TB),
see your doctor**



Risk Factors for TB

- Born in a country with a high incidence of TB
- Recent exposure to a case of active TB
- Prison or history of imprisonment
- Homelessness or history of homelessness
- Drug and alcohol addiction
- Individuals who may have a weakened immune system

**Anyone can get Tuberculosis (TB)
but those most at risk are:**



Those who have had contact with a person with infectious TB



Those who have come to the UK from countries where TB is common



Those with weakened immune systems

TB facts

- TB can be caught by sharing crockery / utensils as an infected person – **False**
- People can die from TB – **True**
- TB can be caught by shaking someone's hand – **False**
- TB is treated with antibiotics – **True** (but specific antibiotics for TB)
- All TB is infectious – **False**
- TB can be caught by touching bed linen or toilet seats - **False**
- Only people born abroad have TB – **False**





UK Health
Security
Agency

Thank you for listening

For more information see - [The Truth About TB](#) or [Tuberculosis \(TB\) - NHS](#)

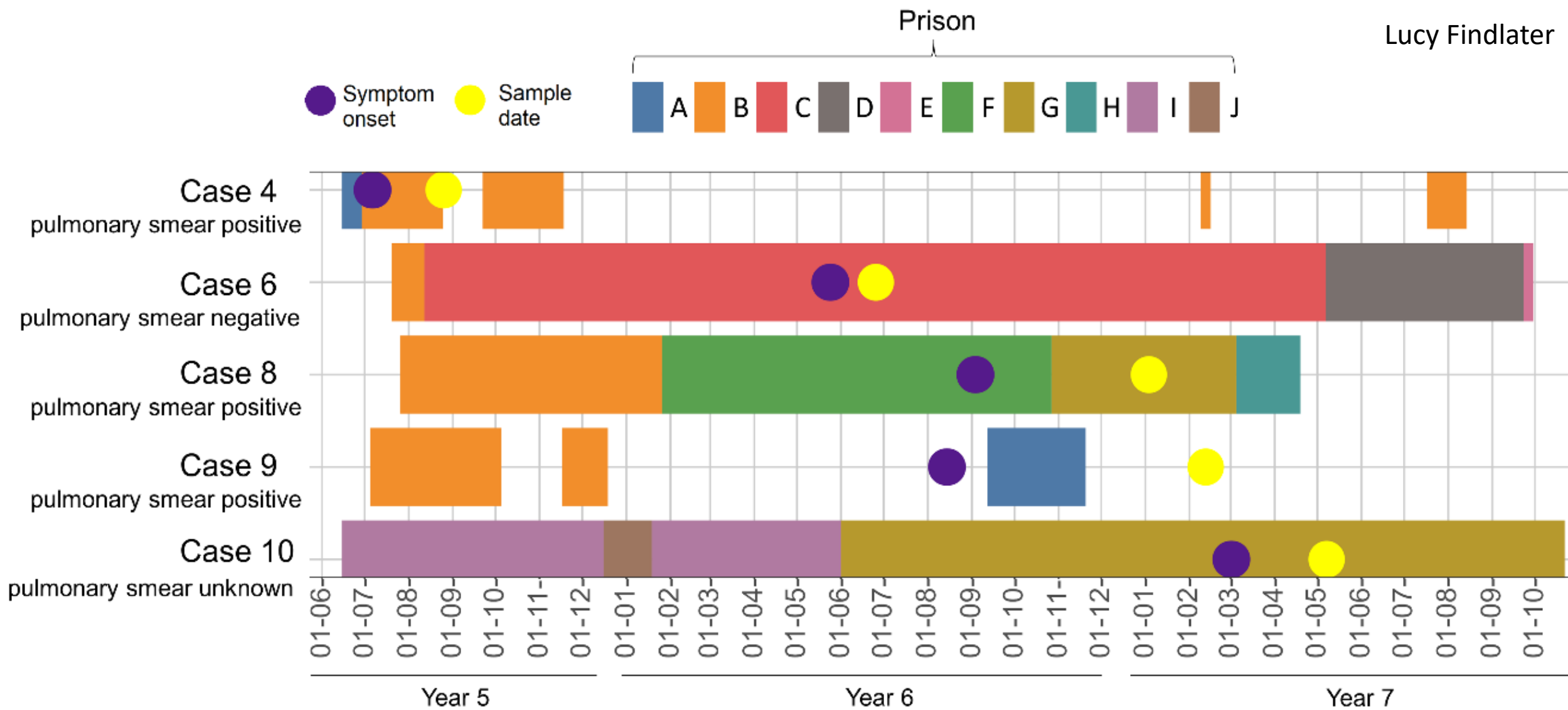


UK Health
Security
Agency

Management of TB in Secure Settings in England – Diagnosis of TB in Prison Estates

10/03/2026

Emily Shaw
Infectious Diseases Consultant – TB Unit, UKHSA



Verbal 'screening'

- NICE, 2016: digital CXR all new arrivals <48hrs (if not done <6M) if available (is not).
- Reception verbal screening for TB symptoms remains mainstay of TB screening in secure sites. Insensitive, but may help identify some individuals who require further testing.
- Two-stage verbal screening at reception

Table 1. TB verbal screening on arrival – summary

	Reception screening	Secondary screen	Recall appointment (if required)
When	Day 0 (within 24 hours)	Day 2 to 7 (within a week of arrival)	3 weeks after reception or secondary screen
Questions asked	Symptom screen for TB. History of current or previous TB treatment	Repeat symptom screen for TB. Full history of previous TB diagnosis and treatment	Repeat symptom screen for TB

Residents Reporting Active TB Symptoms

- Secure setting healthcare doctor/nurse should assess any resident w/ any of:
 - Cough
 - Unexplained weight loss
 - Drenching night sweats
 - Loss of appetite
 - Backpain
 - Coughing up blood
 - High temperature
 - Swollen lymph nodes
 - Tiredness
 - History previous incomplete treatment
- If clinically unstable -> urgent transfer to ED w/ transmission-based precautions.
- If stable, may be possible to achieve a TB dx in secure setting:
 - reduce diagnostic delay,
 - avoid hospital transfers,
 - reduce the stigma of attending hospital while handcuffed to officers
 - limit staff exposure (during transfers and bed-watch).



Diagnosis I



- If symptomatic and stable
 - Prompt referral to local NHS TB service
 - Respiratory isolation asap
- If Pulmonary TB suspected – Microbiological testing:
 - 3 sputum specimens (supervised)
 - Consecutive days, ≥ 1 early am on waking & pre-breakfast - pulmonary secretions from overnight
 - Transparent, screw-capped, leak-proof containers
 - Request acid fast bacilli smear and culture and for one, also request TB PCR. Smear and TB PCR is rapid, highly sensitive with good positive predictive value for infectious TB and available from secure site. Culture is gold-standard. Will be patients who are smear negative, culture positive. Clinician to risk assess when can deisolate.
 - High quality=thick w/ sticky material. Poor quality eg saliva may -> false -ve though may still -> +ve TB PCR
 - Labelled w/ date of collection & patient identifiers
 - Sent to local microbiology lab asap (specimen fridge if weekend)
 - Flag samples as important w/ local micro lab and pursue results

Diagnosis II

- TB suspected – Radiology
 - CXR asap & follow-up urgently
 - Ideally within secure setting eg mobile or ultra-mobile radiology
 - Otherwise, refer to local radiology department, or done as part of a local NHS TB service assessment.
 - Any resident with abnormal CXR suggestive of TB, regardless of symptoms sputum sample results, should be referred urgently to the local NHS TB service
- IGRA tests designed to detect TB infection, not recommended as diagnostic test for active TB disease.



Other scenarios

- Extra-pulmonary TB
- Contact in incident but not yet tested – CXR and symptoms for TB disease, IGRA for TBI
- TBI, but declined or unable to treat - remain vigilant for symptoms

TB Testing in Incidents and Outbreaks

- Incident: person diagnosed with infectious TB during time in secure site
- Outbreak: >1 case linked by time, place, common exposure or TB strain
- HPT/IMT will determine the extent of Contact Tracing
- Contacts from 3M prior to first finding consistent with TB Disease, prioritise those with greatest contact and vulnerable contacts 'stone in pond' approach and 'dynamic risk assessment'
- Flag on Content Management System
- Provide information
- Symptom check (proceed for possible TB disease)
- Ideally CXR for disease and IGRA for TBI (8 weeks)



Routine TB Infection testing

- No national commissioning for routine TBI testing in secure settings
- In secure settings, robust contact tracing and testing of close contacts should be priority over routine TBI screening - greatest overall benefit. Also raise awareness of TB symptoms and promptly detect active cases
- In this context, active TB needs to be excluded first – should not be using IGRA to screen for active disease.
- May opt to commission locally systematic TB testing, cost-effective may be better in areas of high incidence, or secure settings with high proportion of foreign national residents or social risk factors ‘enhanced targeted testing’.
- TBI testing should only be conducted when clear pathways established for residents & staff who test positive to be managed until treatment completed.



Thank you

UK Health Security Agency

Tuberculosis

Tuberculosis (TB) symptoms:



A cough that lasts more than 3 weeks



Unexplained weight loss



A high temperature



Heavy night sweats



Lack of appetite



Feeling very tired and having no energy



UK Health
Security
Agency

TB Medicines Management in Secure Settings

Dr Martin Dediccoat, TB Unit, UKHSA
10th March 2026

Introduction

- *Cases illustrating some of the issues with medications used to treat tuberculosis*

Available Guideline



UK Health
Security
Agency

Guidance

Management of tuberculosis in secure settings in England

Updated 9 October 2025

Case 1.

- 35 year old man
- Unwell for 3 months
- Diagnosed with pulmonary tuberculosis
- Started on
 - Rifampicin
 - Isoniazid
 - Pyrazinamide
 - Ethambutol



Case 1.

- After 5 days on treatment
 - Became very agitated
 - Sweating
 - Vomitting
 - Diarrhoea
 - Aggressive
 - Paranoid
- What could be happening?



Case 1.

- Also taking methadone 30 mls daily
- Has signs of withdrawal
- Refuses to take any more treatment for TB
- What can be done now?



Case 1.

- Do a Clinical Opiate Withdrawal Score (COWS)
 - Pulse 0,1,2,3,4
 - Sweating 0,1,2,3,4
 - Restlessness 0,1,2,3,5
 - Pupil size 0,1,2,5
 - Bone and joint ache 0,1,2,4
 - Runny nose / tearing 0,1,2,4
 - GI Upset 0,1,2,3,5
 - Tremor 0,1,2,4
 - Goose bumps 0,3,5
 - Yawning 0,1,2,4
 - Anxiety 0,1,2,4



Case 1.

- COWS Score

- Mild 5-12
- Moderate 13-24
- Moderately severe 25-36
- Severe >36

- Repeat score based on severity

- Prescribe or increase methadone dose incrementally depending on score

Case 1. Outcome

- Methadone dose increased over 2 weeks to 40mls daily
- Person completed TB treatment
- Methadone decreased after treatment completed

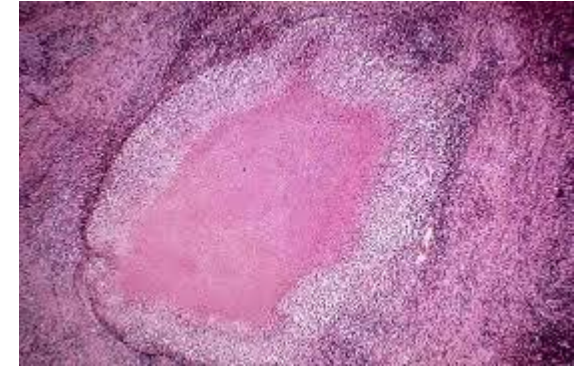
Rifampicin

- Rifampicin is an enzyme inducer
- Causes increased metabolism of some drugs via induction of cytochrome P450 system
 - CYP3A4, CYP2C9, CYP2C19, CYP2C8, and CYP2B6
- Other classes of drugs effected
 - Anticonvulsants (lamotrigine, phenytoin, carbamazepine, valproic acid)
 - Contraceptives
 - Anticoagulants
 - Antipsychotics
 - Cardiac medication
 - (420 other medications listed in BNF)

Case 2.

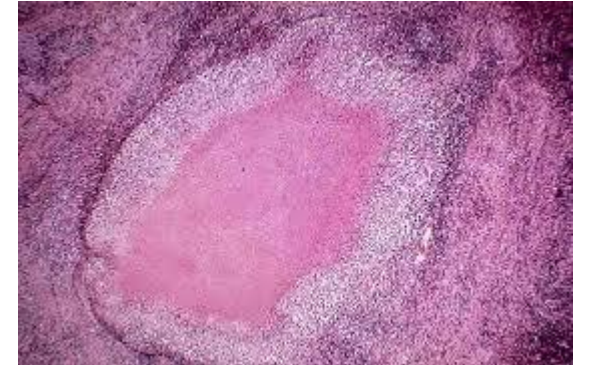
- 55 year old man diagnosed with lymph node TB
- Has type 2 diabetes
- Had been a heavy drinker in the past

- Started on standard treatment
 - Rifampicin
 - Isoniazid
 - Pyrazinamide
 - Ethambutol



Case 2.

- After 2 weeks on treatment developed pain in both feet
 - Burning pain
 - Radiating up to mid shin
 - Worse at night
- What could be happening?



Case 2.

- Symptoms are of peripheral neuropathy
- Probable cause isoniazid
- Predisposing factors
 - Alcohol
 - Diabetes
 - Malnutrition
 - HIV infection
 - Hepatitis B/C
 - Renal disease

Case 2.

- Isoniazid causes functional pyridoxine (B6) deficiency.
- Can be mitigated by giving all people on TB treatment pyridoxine
- High risk people may need higher dose
- If peripheral neuropathy develops or worsens – stop isoniazid and use an alternative agent

Isoniazid

- Interacts with > 400 other medications
- Causes raised levels of carbamazepine

Case 2.

- Isoniazid swapped for another medication (moxifloxacin)
- Symptoms of peripheral neuropathy settled

Learning Point

- Be aware of common adverse effects of commonly used TB medications
 - Rifampicin – liver toxicity and drug interactions
 - Isoniazid – liver toxicity and peripheral neuropathy
 - Pyrazinamide – liver toxicity and gout
 - Ethambutol – retinal toxicity
- Check drug interactions
- Ask for pharmacy input



UK Health
Security
Agency

IPC and TB in Prisons and Places of Detention

Marina Sanchez, Senior IPC Nurse on behalf of
Esther Taborn, Infection Prevention and Control Consultant
Nurse, UKHSA

When is (or might) a person in prison infectious?

A person is defined as having potentially infectious TB if they are a person:

- in whom there is a clinical suspicion of pulmonary or laryngeal TB, pending the outcome of diagnostic tests
- with a CXR compatible with active TB disease, pending the outcome of diagnostic tests and specialist review
- with confirmed pulmonary or laryngeal drug-sensitive TB until at least 2 weeks of treatment have been taken with good adherence and absorption and the local NHS TB service have deemed them safe to de-isolate
- with confirmed pulmonary or laryngeal TB and non-adherent with treatment or previous history of incomplete treatment, for as long as deemed necessary by the local NHS TB service and HPT

A person with active TB disease with no lung or laryngeal involvement (extra-pulmonary TB) is not normally infectious and does not require isolation.

A person diagnosed with LTBI is not infectious and does not require isolation, regardless of treatment status.

Transmission based precautions for TB – Isolation

- **Single** room / cell with the **door kept shut**
- **Assess ventilation** to make sure air from the room is not extracted to other areas
- **Only essential staff** or visitors into the cell and wearing the **correct Personal Protective Equipment (PPE)**
- Ensure other **healthcare needs** continue to be **met**
- Think about **non-stigmatizing signage** or alerts for the staff / those who clean
- Ideally the **cell** should have **sanitation** – sink and toileting
- If the person in prison needs to leave the cell, e.g. for a shower / toilet, they should wear a fluid resistant surgical mask (FRSM). They should shower/toilet alone – with staff wearing PPE. If the FRSM gets wet it should be replaced.

Transmission based precautions – management of the environment and equipment

- The cell /room and any showering / toileting facilities should be kept visibly **clean** and in a **good state** of repair.
- **Only essential items** in the cell – noting that it is the person's home.
- Anything that goes into the cell/ room and then goes to another person in prison will need cleaning
- The person in prison should clean their own cell using a general purpose detergent in warm water followed by a solution of 1,000 parts per million (ppm) available chlorine OR a combined detergent or disinfectant solution at a dilution of 1,000 ppm available chlorine
- The secure setting is responsible for providing all the cleaning materials. The reusable cleaning equipment should only be used in the isolation cell / room

Transmission based precautions -PPE

- Respiratory protective equipment (RPE) should always be put on (donned) and removed (doffed) outside the isolation cell / room, after the door is closed and any security chain to the person in prison has been removed
- Always undertake hand hygiene before putting on and after removing RPE
- RPE for infectious TB can be either a filtering face piece (FFP3) mask OR a powered respirator hood.
- Powered hoods have the advantage of being compatible with facial hair and do not need fit testing. But they must comply with HSE guidelines and have decontamination schedules in place. Think about storage and maintenance as per manufacturers instructions.

Guidelines Infection prevention and control guidelines for adult prisons - GOV.UK

An FFP3 mask or powered respirator hood should be used when a staff member is in contact with a resident with an infection that transmits through the air.

FFP3 respirators must be:

- single use (disposable) and fluid-resistant (EN149)
- fit tested on all staff to ensure an adequate fit as per manufacturer's instructions
- fit checked as per manufacturer's instructions every time it is put on to ensure a good seal or fit (HSE guidelines for putting on respirators and performing a fit check)
- compatible with other facial protection used either for infection prevention or security purposes
- facial hair may impede the seal of the mask and must not interfere with the seal surface.

Further information regarding fitting and fit checking of respirators can be found on the HSE website. HMPPS are also developing a SOP

Other PPE

- This may include **aprons, gloves or face protection** and should be used as per standard and transmission-based infection control precautions
- Other PPE should be put on and take off inside the person in prisons cell or room
- For example, if staff are to handle used tissues or equipment or furniture, they may need additional PPE
- Hand hygiene should always be undertaken on removal of gloves and after leaving the isolation room
- Advice on donning and doffing PPE as well as hand hygiene can be found here: [Personal protective equipment use for AGPs - GOV.UK](#)