# TB Webinar

## Raising awareness of TB in adult social care

Tanya Brady Senior IPC Nurse PH/HPT HCC
Geraldine Bruce Head of Health Protection HCC
March 2024

# Webinar Aim & Outcomes

***Aim***

To raise awareness of TB among  managers & staff working in adult social care

***Outcomes***

- Increased knowledge & awareness of TB
- Be able to recognise the symptoms of TB
- Identify those most at risk
- Understand the  difference between active & latent TB
- How to prevent the spread of TB
- TB rates in England & steps to improve prevention & control of TB

# Introduction

- Figures published by UK Health Security Agency in 2023 TB report (data to end of 2022) show TB cases in England in 2022 were stable compared to 2021 (4,380 in 2022 compared to 4,411 in 2021).

Tuberculosis in England, 2023 report (data up to end of 2022) - GOV.UK (www.gov.uk)

- While England remains a low incidence country for TB provisional data indicate that cases of TB in England rose by 10.7% in 2023 compared to 2022 ( 4,850 compared to 4,380). The rise signals a rebound of TB cases to above the pre COVID-19 pandemic numbers.

- In the past year there have been a number of confirmed TB cases across ASC settings in Hertfordshire

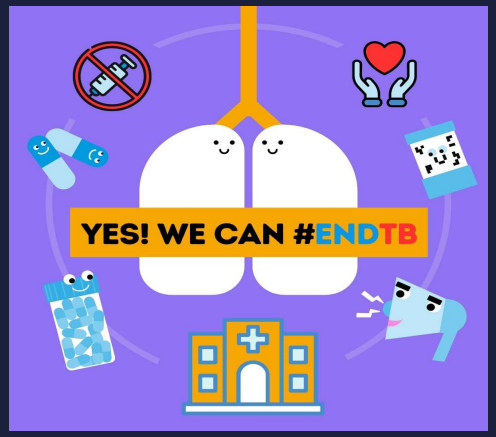
- **World TB Day (24 March)**

# World TB Day 24 March

- Each year we commemorate World TB Day to raise awareness about the devastating health, social and economic consequences of tuberculosis (TB) and to step up efforts to end TB

- The date in 1882 marks the day when Dr Robert Koch a German physician & Microbiologist announced his discovery of *Mycobacterium tuberculosis* the bacteria that cause TB which opened the way towards diagnosing and curing this disease.

- The theme this year '**Yes! We can end TB**'




# *Tuberculosis (TB)*

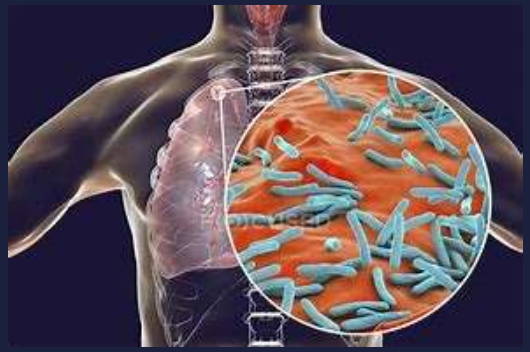
- Important public health concern
- The World Health Organization (WHO) estimates that at least 10 million people fall ill with TB, and over 1 million die from the disease annually. It is the leading killer of people with HIV infection worldwide.
- 75 million lives have been saved since 2000 by efforts to end TB.

# What is Tuberculosis (TB)

- Tuberculosis otherwise known as ( TB) is a bacterial infection spread through inhaling tiny droplets from the coughs or sneezes of an infected person.

- TB  mainly affects the lungs however it can affect other parts of the body including the glands, brain, bones  and spine.

- It is a potentially serious condition but is curable if diagnosed early and treated promptly.



- TB is a notifiable disease in the UK

# Symptoms of TB

**Symptoms of TB usually come on gradually and include:**

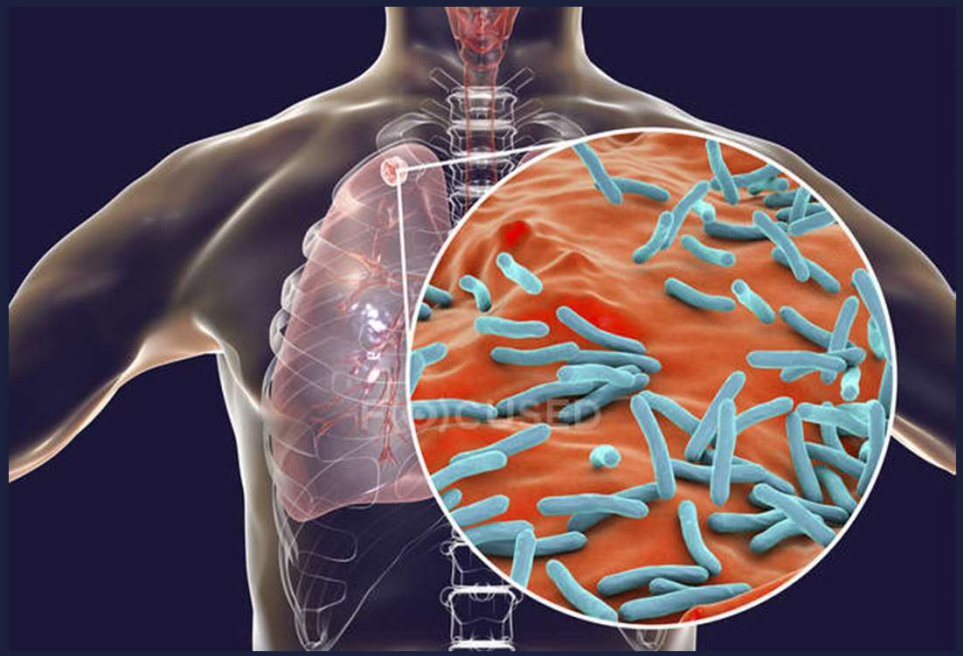
- A cough that lasts more than 3 weeks- you may cough up mucus (phlegm) or mucus with blood in it.
- A high temperature
- Drenching night sweats
- Loss of appetite
- Unexplained weight loss
- Tiredness and fatigue


**Although these are the most common symptoms, symptoms of TB in other parts of the body will depend on the area affected and symptoms can vary from person to person.**

**Recognising the symptoms of TB and prompt reporting to the GP will lead to early diagnosis and prompt treatment**

# What Causes TB?

- TB is caused by *Mycobacterium tuberculosis bacteria*
- TB that affects the lungs ( Pulmonary TB ) is the most infectious type. You would usually have to spend prolonged periods in close contact with an infected person to be at risk of being infected. For example, it often spreads within a family who live in the same house.



# Latent or Active TB ?

**What happens when we breathe in TB bacteria ?**

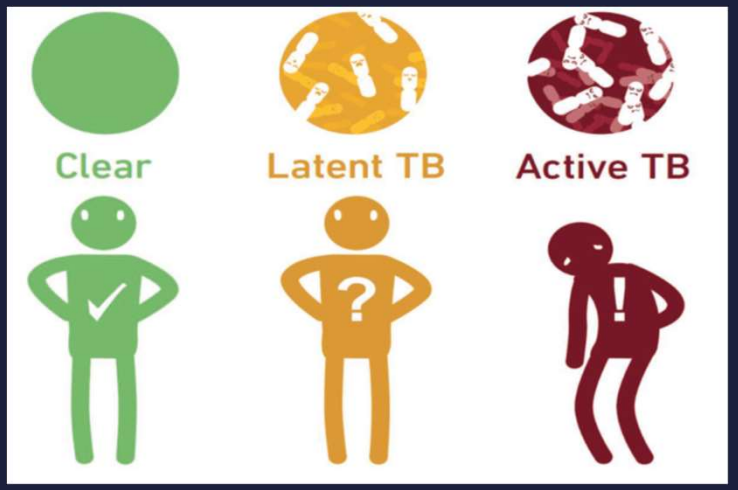
- In most healthy people, the immune system (the body's natural defence against infection and illness) kills the bacteria – won't harm you now or in future

- Sometimes the immune system cannot kill the bacteria but manages to prevent it spreading in the body. This means you will not have any symptoms, but the bacteria will remain dormant in your body. This is known as **'latent TB'.**

- If the immune system fails to kill or contain the infection, it can spread within the lungs or other parts of the body and symptoms will develop within a few weeks or months. This is known as '**active TB'.**

- 1 in 10 people with latent TB will become ill with active TB disease, this usually happens when the immune system is weakened

animation on latent TB



# Who is at risk of TB ?

**Anyone can catch TB, but people particularly at risk include those:**

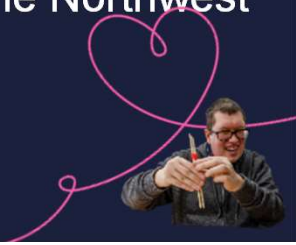
- Who live in ,come from, or have spent time in a country or area with high rates of TB e.g South- east Asia Sub- Saharan Africa & some countries in Eastern Europe. ( around 3 in every 4 TB cases in the UK affect people born outside the UK).
- In close prolonged contact with someone with infectious TB for example living in the same house
- With a weakened immune system such as people with HIV, kidney transplant or receiving certain treatment like chemotherapy
- In poor health or have a poor diet due to lifestyle and social risk factors such as drug misuse, alcohol misuse, homelessness and contact with criminal justice system
- who are very young or very old – the immune systems of people who are young or elderly tend to be weaker than those of healthy adults

**Fig. 2.1.3** Estimated TB incidence rates, 2021

https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2022/tb-disease-burden/2-1-tb-incidence

In the UK TB is associated with deprivation & is most common in large urban areas ( London, the Northwest & West Midlands)

London accounted for 40% of the UK's TB cases.



# Diagnosing TB

**Several tests are used to diagnose tuberculosis (TB), depending on the type of TB suspected.**

**The GP may refer you to a TB specialist for testing and treatment if they think you have TB.**

**For those with symptoms of TB, tests may include**:

- An X-ray
- Samples of phlegm will also often be taken and checked for the presence of TB bacteria.

**For those who have no symptoms but are at risk from TB (e.g those who have prolonged close contact with someone with infectious TB)**

- Mantoux Test – skin test where a small amount of liquid is injected under the skin in your arm. This liquid will cause a small reaction on your skin if you have TB
- Blood test

# Screening for Latent TB

- In some circumstances, you may need to be tested to check for latent TB (when you have been infected with TB bacteria, but do not have any symptoms).

- For example, you may need to be screened if you have been in close contact with someone known to have active TB infection or if you have recently spent time in a country where TB rates are high.

- If you have just moved to the UK from a country where TB is common, you may be screened when you arrive or your GP may suggest screening when you register as a patient.

# Treatment for TB


**TB is curable if diagnosed early and treated promptly**

- TB is treated with a combination of specific antibiotics over a minimum of 6 months.

  **TB treatment is free for everyone in UK**

- After two weeks of taking medication, people with infectious TB usually start to feel better and are no longer infectious.

- It is vitally important that the medication is taken exactly as prescribed and to complete the whole course of antibiotics so that the TB bacteria are completely killed and reduce the risk of bacteria becoming drug resistant.

**TB is a life -threatening illness if left untreated**

Overview | Tuberculosis | Guidance | NICE

# Multi Drug Resistant TB

- Multi drug resistant TB occurs when TB bacteria become resistant to the two most powerful antibiotics normally used to treat the disease making it more difficult to treat .
- Resistance can occur when TB treatment is incorrect or incomplete – for example, when an individual does not complete their full course of treatment or may be given the incorrect treatment.
- Because treatment for TB takes six months and can have difficult side effects, people may be tempted to stop taking their medication before they have completed treatment, particularly if they are starting to feel better .
- People with infectious drug-resistant TB can then also pass this drug-resistant strain on to others.

**It is crucial that medication is taken exactly as prescribed & the full course of treatment completed.**

# *Latent TB Infection (LTBI)*

**Treatment for LTBI is available to people at high risk of developing active disease.**

**There are two ways of identifying people with LTBI:**

- Contact tracing which helps to identify people who have been in close contact with a person with infectious TB to assess whether or not they have been infected with the TB.

- The LTBI testing and treatment NHS programme for new migrants from countries where TB is common is aimed at people who may have LTBI to prevent progression to active TB.

# Prevention & Control Measures

- BCG Vaccination- is very effective at protecting babies & young children against developing severe disease
- Prompt recognition & reporting of symptoms - limiting the spread of TB depends on successfully finding and treating people with the illness, to prevent them from passing it on to others. This can be done through raising awareness of TB, so people with TB symptoms know to seek help.
- Early diagnosis & prompt treatment of TB – most effective way to prevent the spread of TB to others & improved outcome for the individual
- Vigilance for signs & symptoms of TB in at risk groups. Advise to seek prompt medical advice

**As TB is an airborne infection, TB bacteria are released into the air when someone with infectious TB coughs or sneezes. The risk of infection can be reduced by using a few simple precautions:**

- Ensuring adequate ventilation - as TB can remain suspended in the air for several hours with no ventilation
- Promote respiratory hygiene –covering the mouth and nose when coughing or sneezing reduces the spread of TB bacteria.
- Use of masks (Respiratory Protective Equipment)
- Keeping potentially infectious individuals separate from others until no longer infectious
- A healthy immune system -Having a healthy immune system is the best form of defence against TB: 60% of adults with a healthy immune system can completely kill TB bacteria.


END TB

# Resources

**Useful links:**

Tuberculosis (TB) - NHS (www.nhs.uk)

Overview | Tuberculosis | Guidance | NICE

Tuberculosis (TB): action plan for England, 2021 to 2026 - GOV.UK (www.gov.uk)

Tuberculosis (TB): diagnosis, screening, management and data - GOV.UK (www.gov.uk)

NHS England » National infection prevention and control manual (NIPCM) for England

About TB - TB Alert

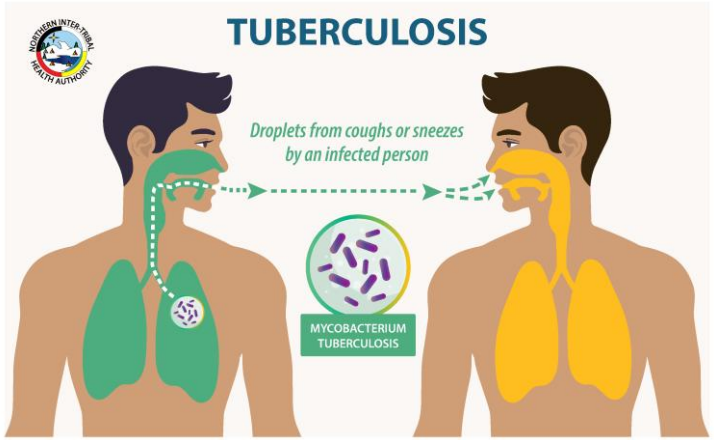
Home - The Truth About TB

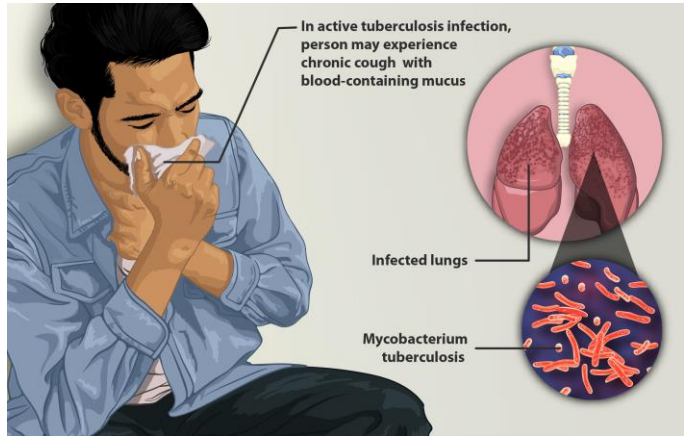
Tuberculosis in England, 2023 report (data up to end of 2022) - GOV.UK (www.gov.uk)

Hertfordshire

Creating a cleaner, greener,
healthier Hertfordshire

UK Health Security Agency



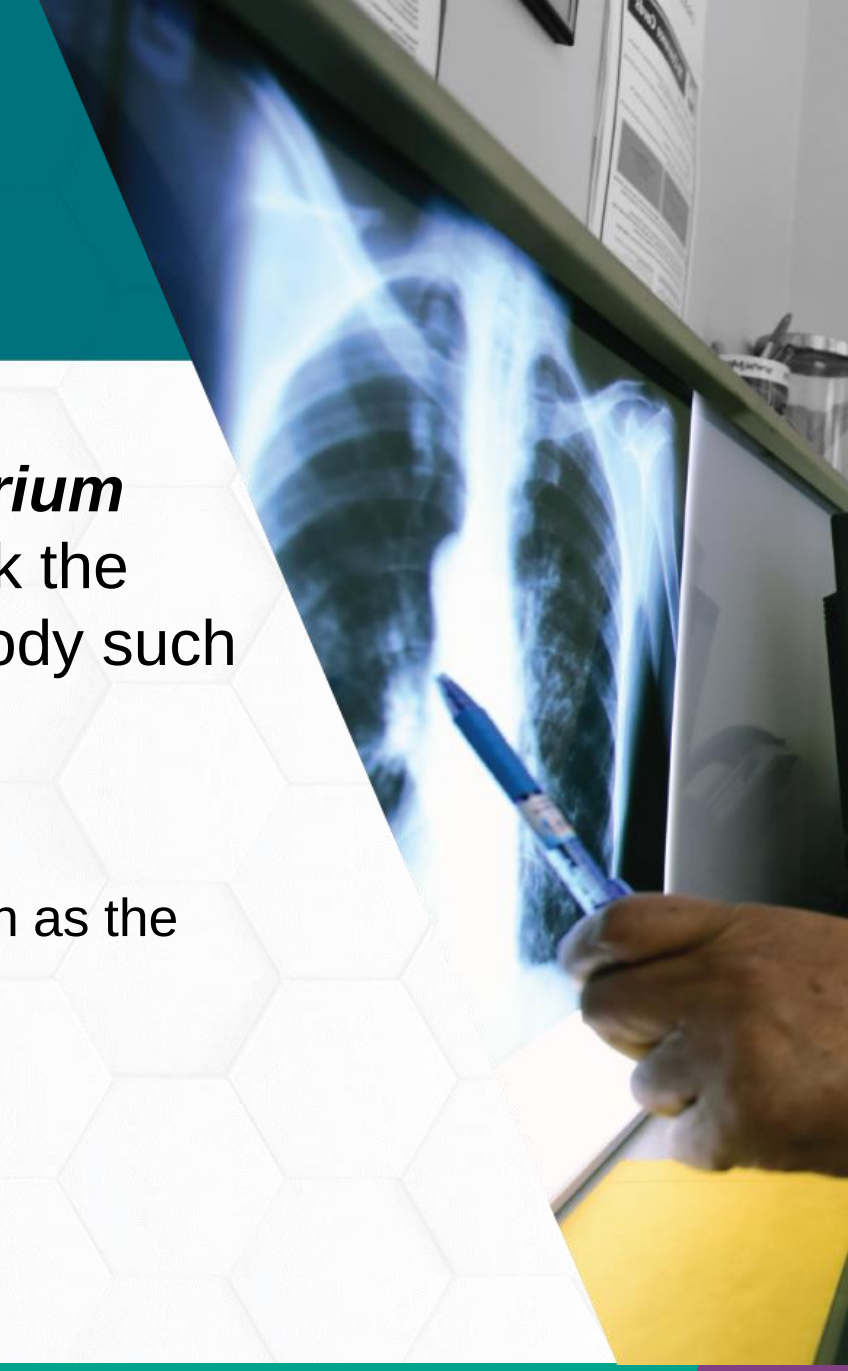




# Tuberculosis (TB) an overview

**Dr Ravi Balakrishnan**

Slides from UKHSA National TB team Stakeholder Communications Pack / CDC

# Tuberculosis (TB)

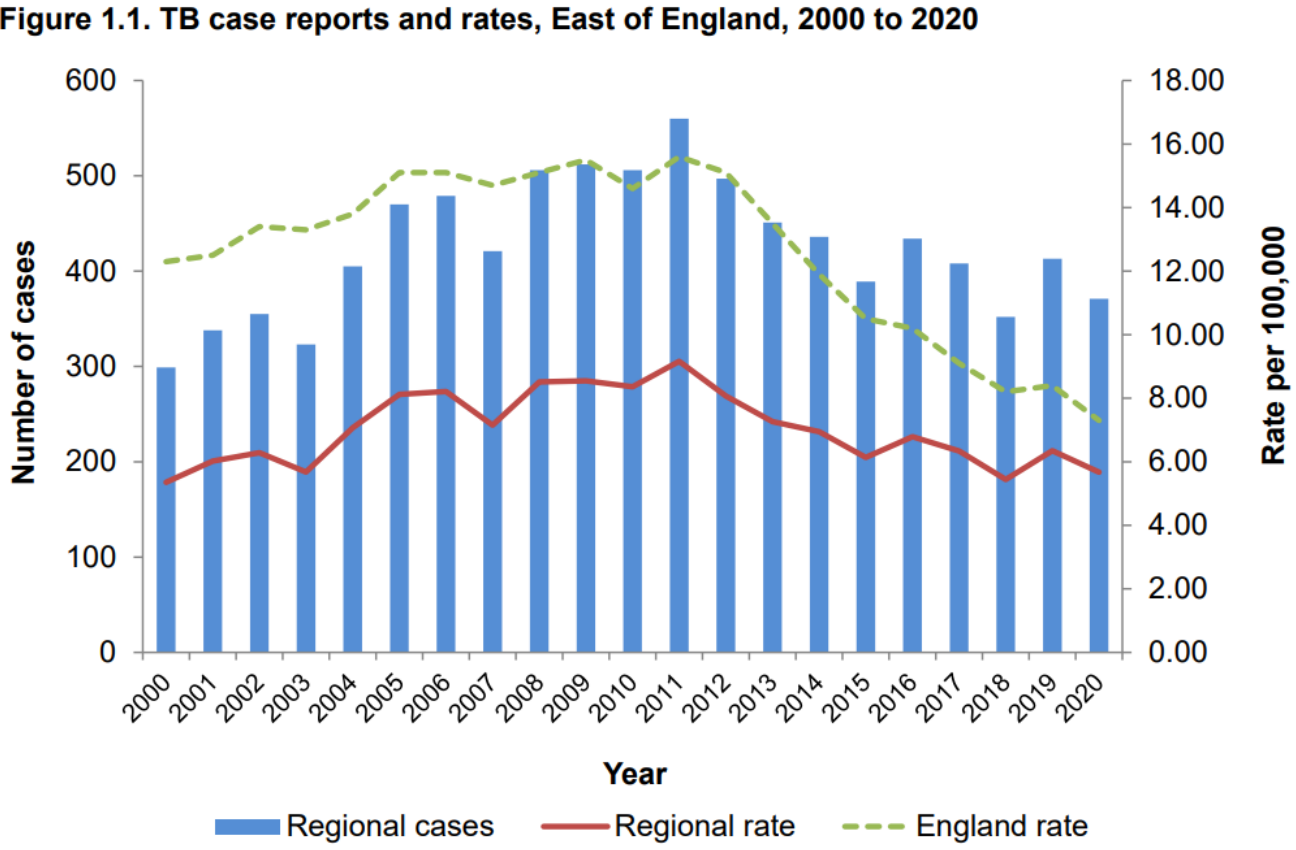


- TB is a disease caused by **bacteria** called ***Mycobacterium tuberculosis***. The bacteria, or TB germs, usually attack the lungs. However, TB germs can attack any part of the body such as the kidney, spine, or brain
  - **Pulmonary TB** is TB in the lungs
  - **Extrapulmonary TB** is TB in places other than the lungs, such as the kidney, spine, or brain
- Not everyone infected with TB germs becomes sick

# Wider context

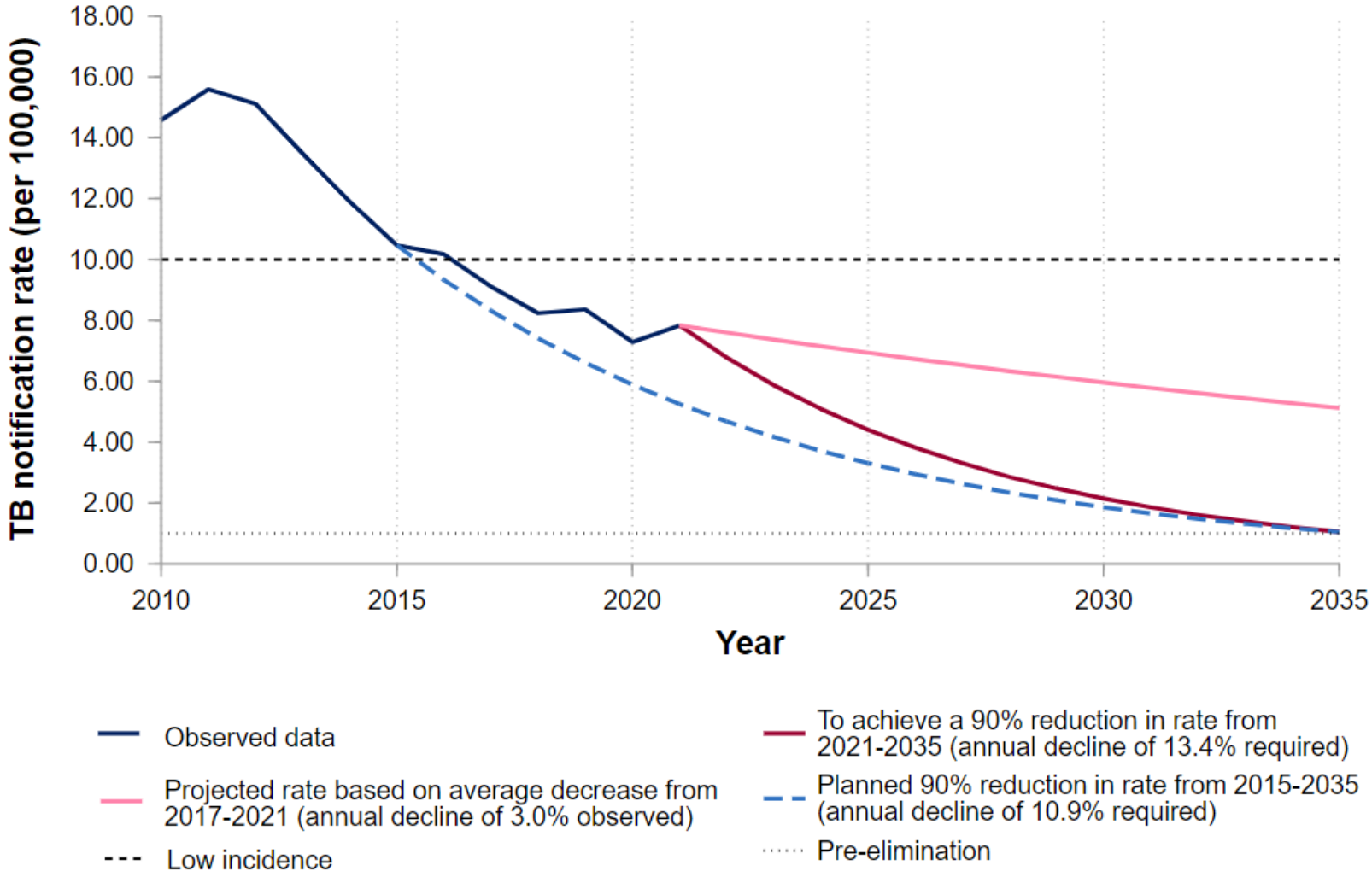
1. TB remains an **important public health emergency**; UKHSA and NHEI are addressing TB control through the National Action Plan and WHO End TB Strategy
2. The decline in TB rates in England is faltering; this will **delay achievement of WHO TB elimination goals**
3. The proportion of **drug resistant disease remains a problem**
4. **Inequalities remain** an important feature of TB epidemiology
5. The **individuals and communities most affected by TB** are also those most affected by other infectious hazards
6. **Progress is not being made** to reduce TB rates in the groups most disproportionately affected

# TB: One of the World's Top Causes of Death due to Infectious Disease




- TB is not a disease of the past
- Too many people in the UK still suffer from TB
- Approximately 10.6 million cases were reported worldwide in 2022
- TB is a **serious disease** that can cause a person to become very sick if not treated with medicine
- Treatments are available to prevent and cure TB

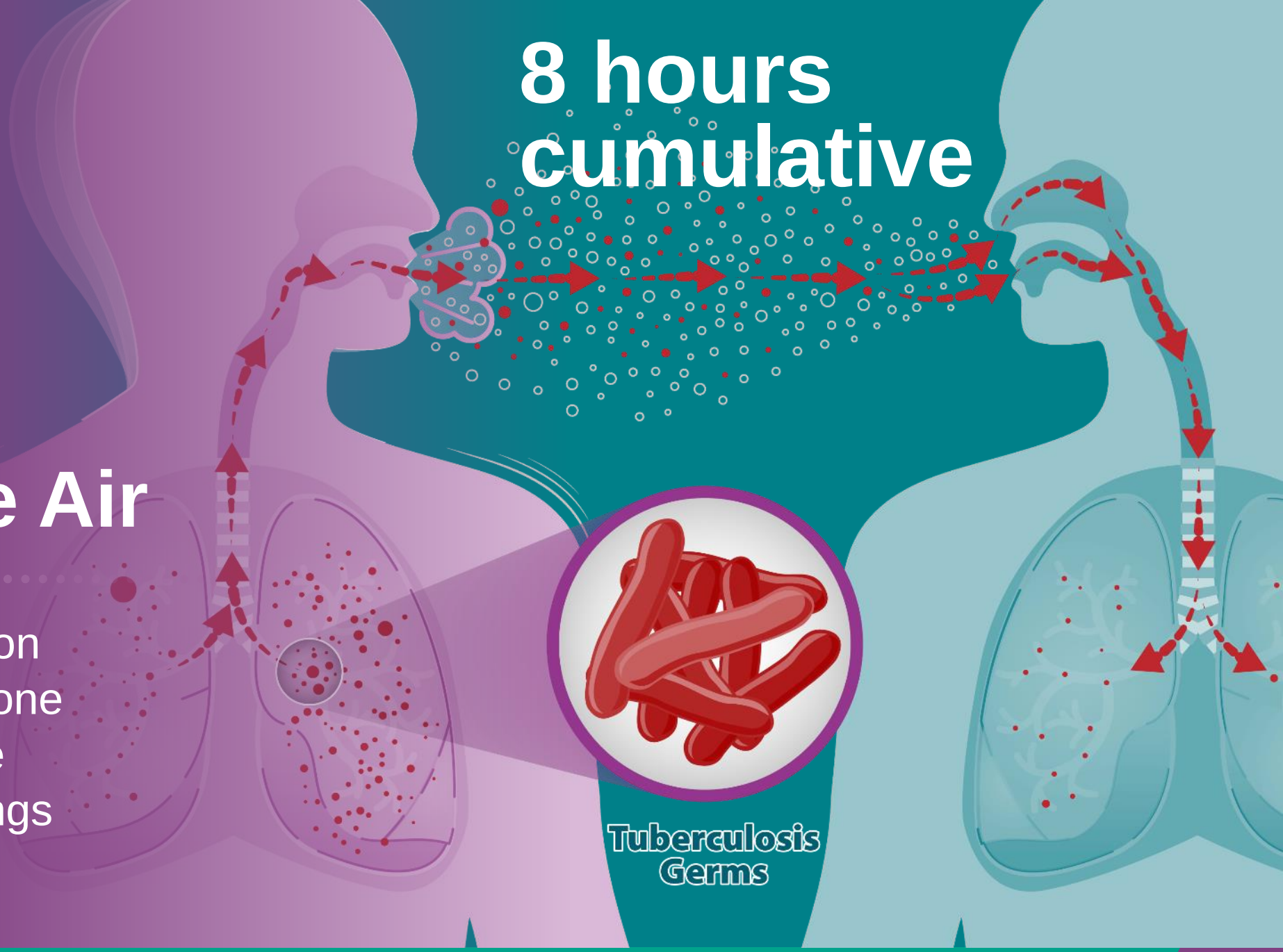
WHO End TB goal is a 90% reduction in TB incidence from 2015 to 2035



# How TB Spreads

# TB Spreads Through the Air

TB spreads from person to person when someone with active TB disease coughs, speaks, or sings



# TB Is NOT Spread by

- Sharing toothbrushes
- Saliva from kissing
- Shaking someone's hand
- Touching bed linens or toilets
- Sharing food, drink, or utensils

# RISK FACTORS

# TB Impacts People from All Over the United Kingdom

TB Personal Stories

# ASIF

I had what I thought was COVID. After a week of feeling rotten, I got better in most ways. But I never felt well like I always had before. Gradually my health just seemed to deteriorate.

ASIF

Think TB:
Not every cough is COVID

THE TRUTH ABOUT TB

Manchester Health & Care Commissioning
A partnership between Manchester City Council and NHS Manchester CCG

BHA for equality in health and social care

TB alert

# Emily

Something boiled on my chest. I was coughing, my ears were itching, I was sweating and sometimes my cough was like shaking!

EMILY

Think TB:
Not every cough is COVID

THE TRUTH ABOUT TB

Manchester Health & Care Commissioning
A partnership between Manchester City Council and NHS Manchester CCG

BHA for equality in health and social care

TB alert

# LISA

It all started with frequent breathlessness, excessive cough, low-grade fever, and extreme hair loss. What seemed like COVID to the world, and what I wished it was, was instead a more ancient disease that continues to harm millions.

LISA

Think TB:
Not every cough is COVID

THE TRUTH ABOUT TB

Manchester Health & Care Commissioning
A partnership between Manchester City Council and NHS Manchester CCG

BHA for equality in health and social care

TB alert

# MAHESH

My cough was getting worse day by day. I took lots of medicine but never got relief. Then something struck my mind that I should go for a TB test.

MAHESH

Think TB:
Not every cough is COVID

THE TRUTH ABOUT TB

Manchester Health & Care Commissioning
A partnership between Manchester City Council and NHS Manchester CCG

BHA for equality in health and social care

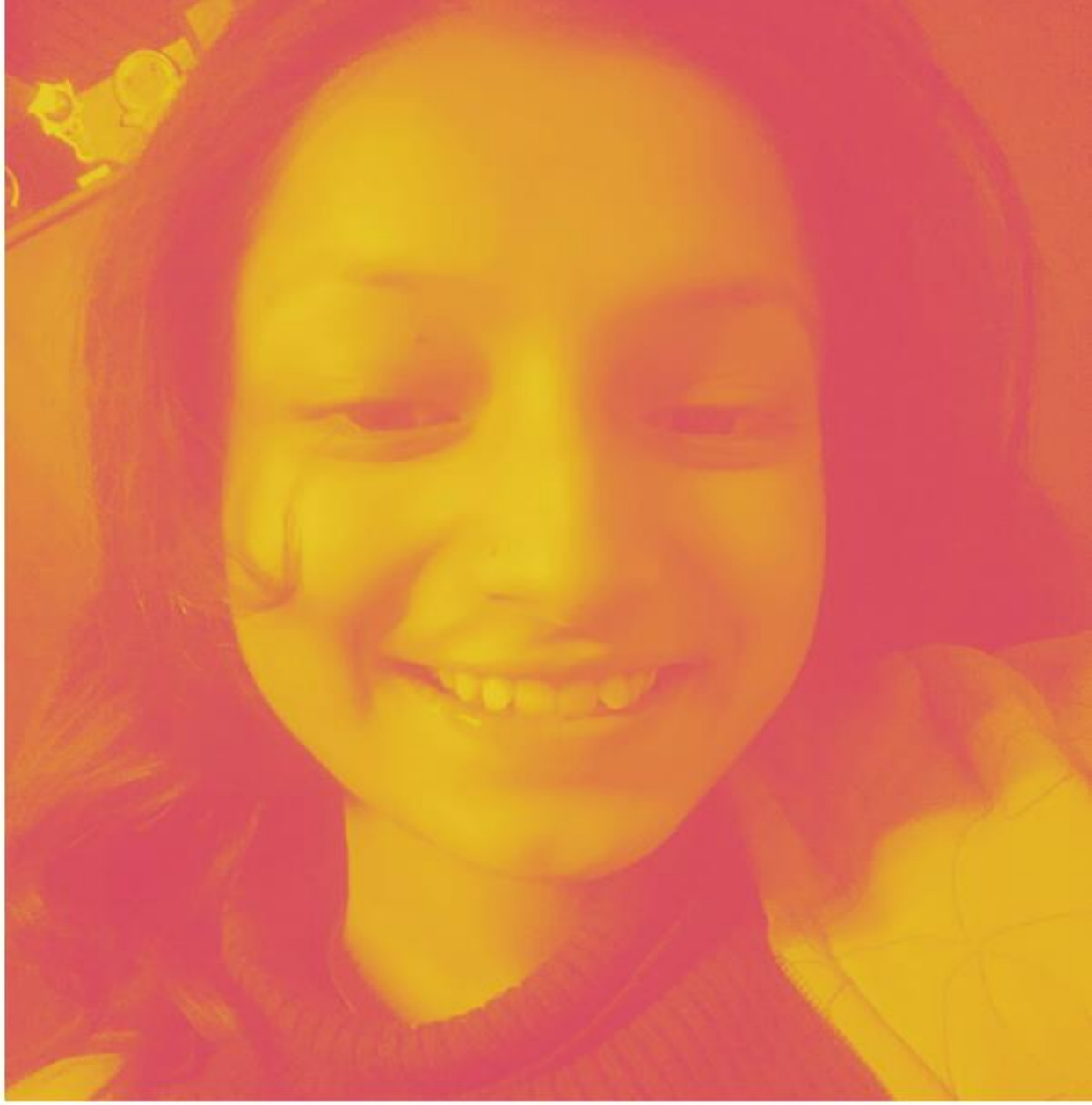
TB alert

# SEEMA

There was a drastic change in my health, I was becoming sick for no reason. I just went on ignoring my health...later in 2020 I became very weak. I was not even left with energy to eat food. Then my mother took me to the doctor and tuberculosis was detected!

**SEEMA**

Think TB:
Not every cough is COVID



THE TRUTH ABOUT TB

Manchester Health & Care Commissioning
A partnership between Manchester City Council and NHS Manchester CCG

BHA for equality in health and social care

TB alert

# Who Is at Higher Risk for Becoming Infected with TB Germs?

## Anyone can get TB

## Some people have a higher risk of getting infected with TB:

- People who have **contact with someone who has** infectious TB disease
- People who were **born in or who frequently travel to** countries where TB disease is common, including India, Pakistan, China, African countries, Eastern Europe, Russia and other countries with high rates of TB
- **Health / social care workers and others who work or live in places at high risk for TB transmission, such as homeless shelters, prisons, and care homes**

# Who Is at Risk for Developing TB Disease?

People at **high risk for developing TB disease** generally fall into two categories:

- Those who have been **recently infected with TB germs**
- Those with **medical conditions that weaken the immune system**, such as:

HIV infection

Diabetes

Specialized treatment for rheumatoid arthritis or Crohn's disease

Organ transplants

Severe kidney disease

cancer

Substance abuse

Medical treatments such as corticosteroids

Silicosis

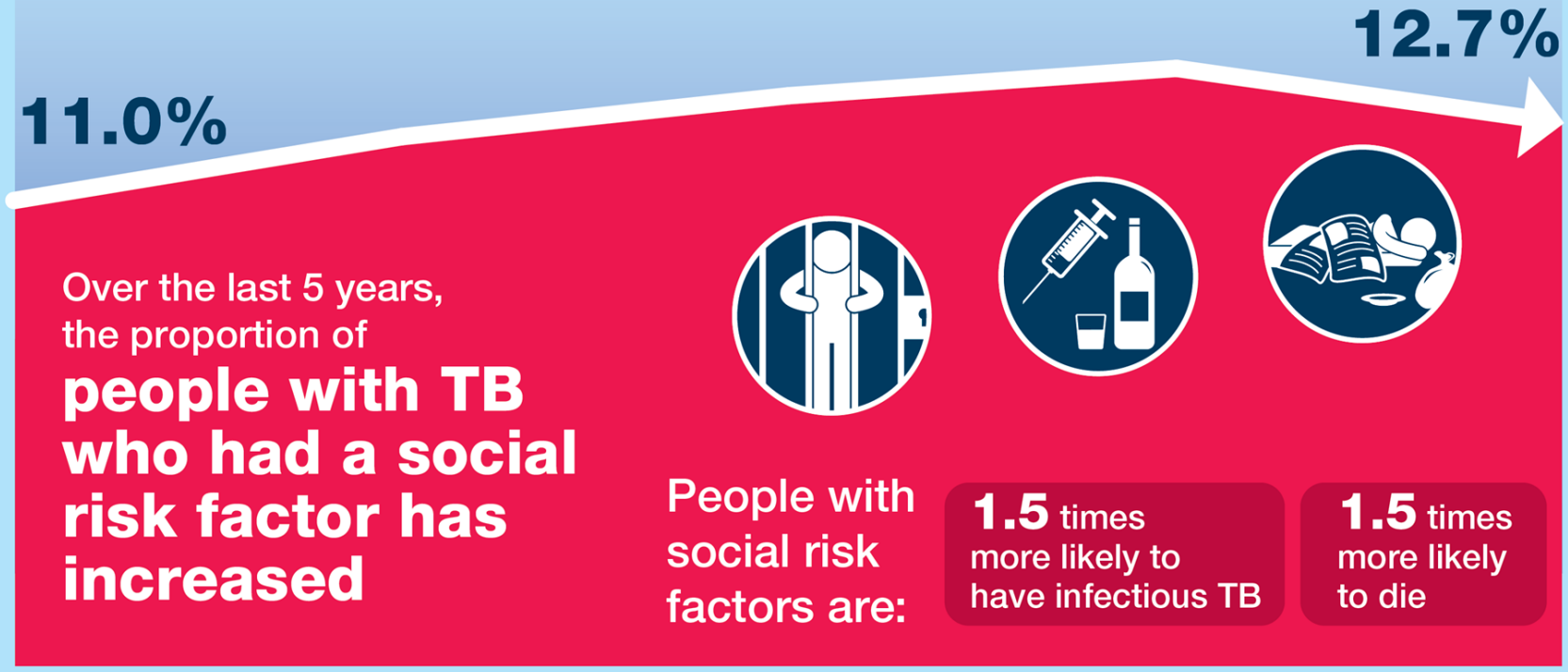
Malnourished

# Who has increased risk?

## TB in England

**73%**
**of TB cases**
born abroad

## Under-served groups are most at risk of TB




UK Health Security Agency

# TB Action Plan 2021-2026

| Priority 1 | Priority 2 | Priority 3 | Priority 4 | Priority 5 |
|---|---|---|---|---|
| **Recovery from COVID-19** | **Prevent TB** | **Detect TB** | **Control TB disease** | **Workforce** |

**Actions for specific population groups**

For example, under-served populations, new entrants, drug resistant TB, paediatrics

**Measurable outcomes and indicators**

**Systems wide actions**

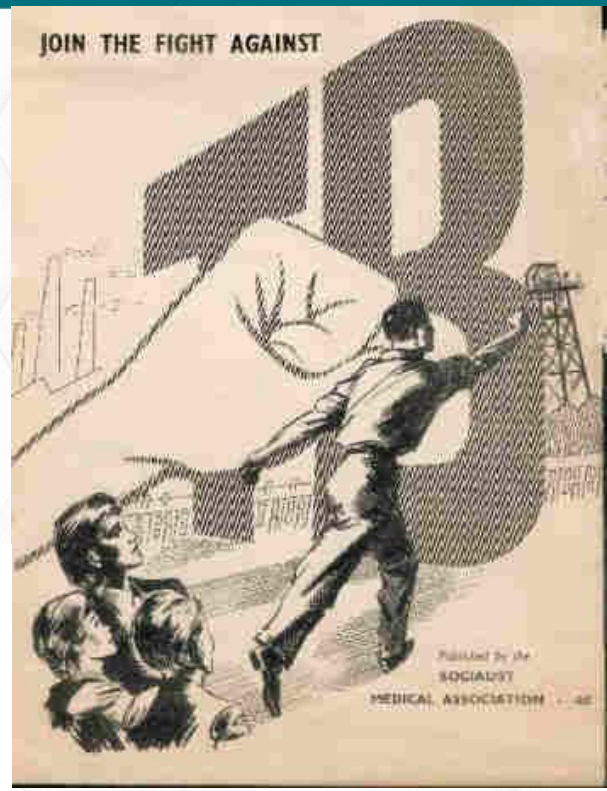
For example, communications, surveillance, research, prevention and health inequalities agendas

# UKHSA and Tuberculosis

- **Intelligence**:
  - Routine surveillance - data collection, analysis, interpretation and dissemination
  - Assessment of need
  - Service design and improvement
  - Priorities and policy
- **Identify and respond to clusters and outbreaks**
- **Engaging with stakeholders**:
  - Commissioners / Clinicians / EHOs
  - Local authorities / ICBs / NHS England / third sector
  - Public - media
- **Training**

# Stakeholder Engagement

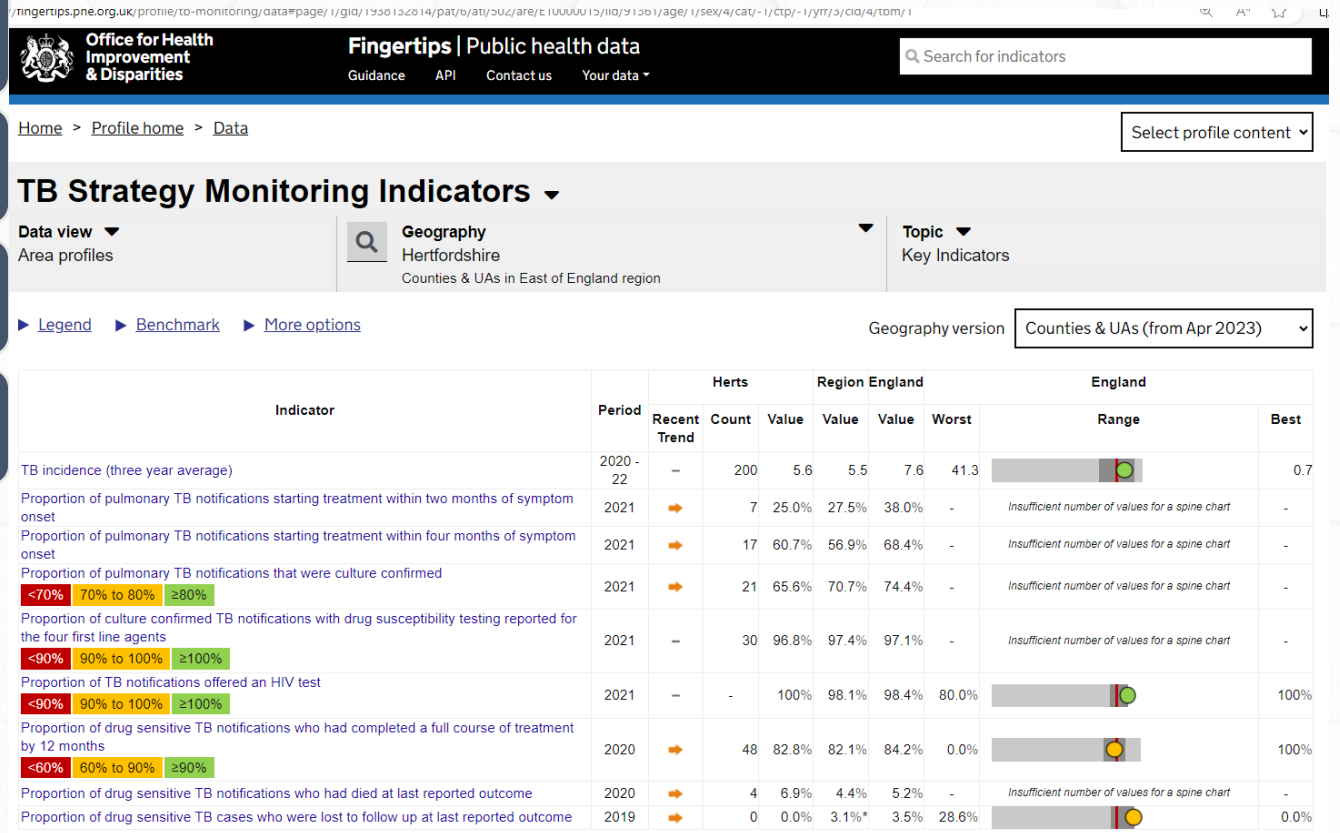
- TB Control Board
- HPT TB Leads
- Local TB networks
- National TB Surveillance
- TB Services
- Local authorities




UNITE TO END TB

# Current Reports

- Annual TB in England Report
- TB in England Quarterly Report
- TB Strategy Monitoring Indicators (Fingertips)
- WGS data (Internal)
- NTBS reporting (NTBS users only)



fingertips.phe.org.uk/profile/tb-monitoring/data#page/1/gid/1938132814/pat/6/ati/502/are/E10000015/iid/91361/age/1/sex/4/cat/-1/ctp/-1/yrr/3/cid/4/tbm/1

Office for Health Improvement & Disparities

**Fingertips** | Public health data

Guidance API Contact us Your data

Search for indicators

Home > Profile home > Data

Select profile content

## TB Strategy Monitoring Indicators

**Data view** Area profiles

**Geography** Hertfordshire
Counties & UAs in East of England region

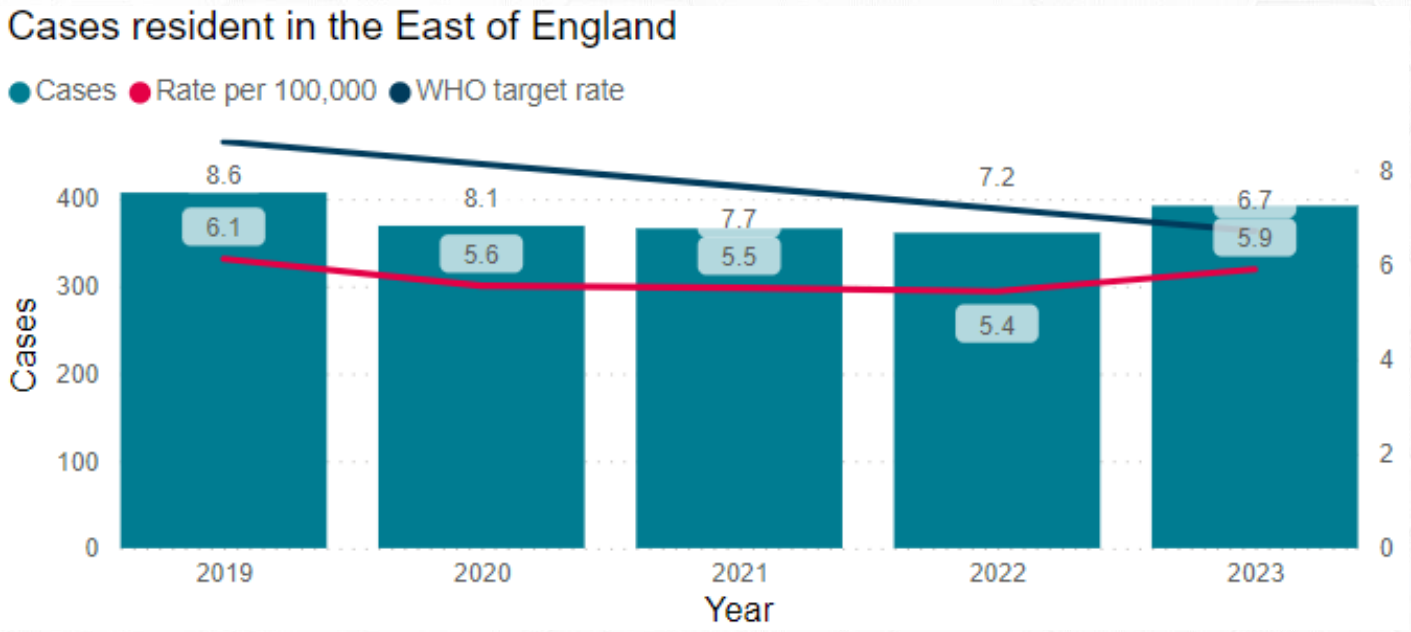
**Topic** Key Indicators

▶ Legend ▶ Benchmark ▶ More options

Geography version: Counties & UAs (from Apr 2023)

| Indicator | Period | Herts | | Region England | | England | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Recent Trend | Count | Value | Value | Value | Worst | Range | Best |
| TB incidence (three year average) | 2020 - 22 | – | 200 | 5.6 | 5.5 | 7.6 | 41.3 | | 0.7 |
| Proportion of pulmonary TB notifications starting treatment within two months of symptom onset | 2021 | → | 7 | 25.0% | 27.5% | 38.0% | - | *Insufficient number of values for a spine chart* | - |
| Proportion of pulmonary TB notifications starting treatment within four months of symptom onset | 2021 | → | 17 | 60.7% | 56.9% | 68.4% | - | *Insufficient number of values for a spine chart* | - |
| Proportion of pulmonary TB notifications that were culture confirmed <70% 70% to 80% ≥80% | 2021 | → | 21 | 65.6% | 70.7% | 74.4% | - | *Insufficient number of values for a spine chart* | - |
| Proportion of culture confirmed TB notifications with drug susceptibility testing reported for the four first line agents <90% 90% to 100% ≥100% | 2021 | – | 30 | 96.8% | 97.4% | 97.1% | - | *Insufficient number of values for a spine chart* | - |
| Proportion of TB notifications offered an HIV test <90% 90% to 100% ≥100% | 2021 | – | - | 100% | 98.1% | 98.4% | 80.0% | | 100% |
| Proportion of drug sensitive TB notifications who had completed a full course of treatment by 12 months <60% 60% to 90% ≥90% | 2020 | → | 48 | 82.8% | 82.1% | 84.2% | 0.0% | | 100% |
| Proportion of drug sensitive TB notifications who had died at last reported outcome | 2020 | → | 4 | 6.9% | 4.4% | 5.2% | - | *Insufficient number of values for a spine chart* | - |
| Proportion of drug sensitive TB cases who were lost to follow up at last reported outcome | 2019 | → | 0 | 0.0% | 3.1%* | 3.5% | 28.6% | | 0.0% |

# Annual Regional TB incidence - 2023




Rate by Local Authority by Year

| Local Authority | 2019 | 2020 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|
| Bedford | 8.6 | 4.3 | 5.9 | 6.5 | 8.6 |
| Cambridgeshire | 7.6 | 6.5 | 4.7 | 6.0 | 5.4 |
| Central Bedfordshire | 2.0 | 1.4 | 2.7 | 3.4 | 2.4 |
| Essex | 3.8 | 3.7 | 2.9 | 2.9 | 3.2 |
| Hertfordshire | 6.4 | 5.6 | 5.1 | 6.0 | 5.7 |
| Luton | 19.6 | 24.9 | 20.9 | 19.1 | 22.7 |
| Milton Keynes | 9.0 | 6.2 | 10.1 | 7.3 | 8.0 |
| Norfolk | 4.5 | 4.4 | 4.1 | 3.6 | 4.4 |
| Peterborough | 16.6 | 13.9 | 21.3 | 16.6 | 20.3 |
| Southend-on-Sea | 7.7 | 7.7 | 10.0 | 4.4 | 10.0 |
| Suffolk | 2.6 | 3.4 | 2.5 | 4.1 | 4.1 |
| Thurrock | 9.7 | 4.0 | 8.0 | 6.3 | 5.1 |

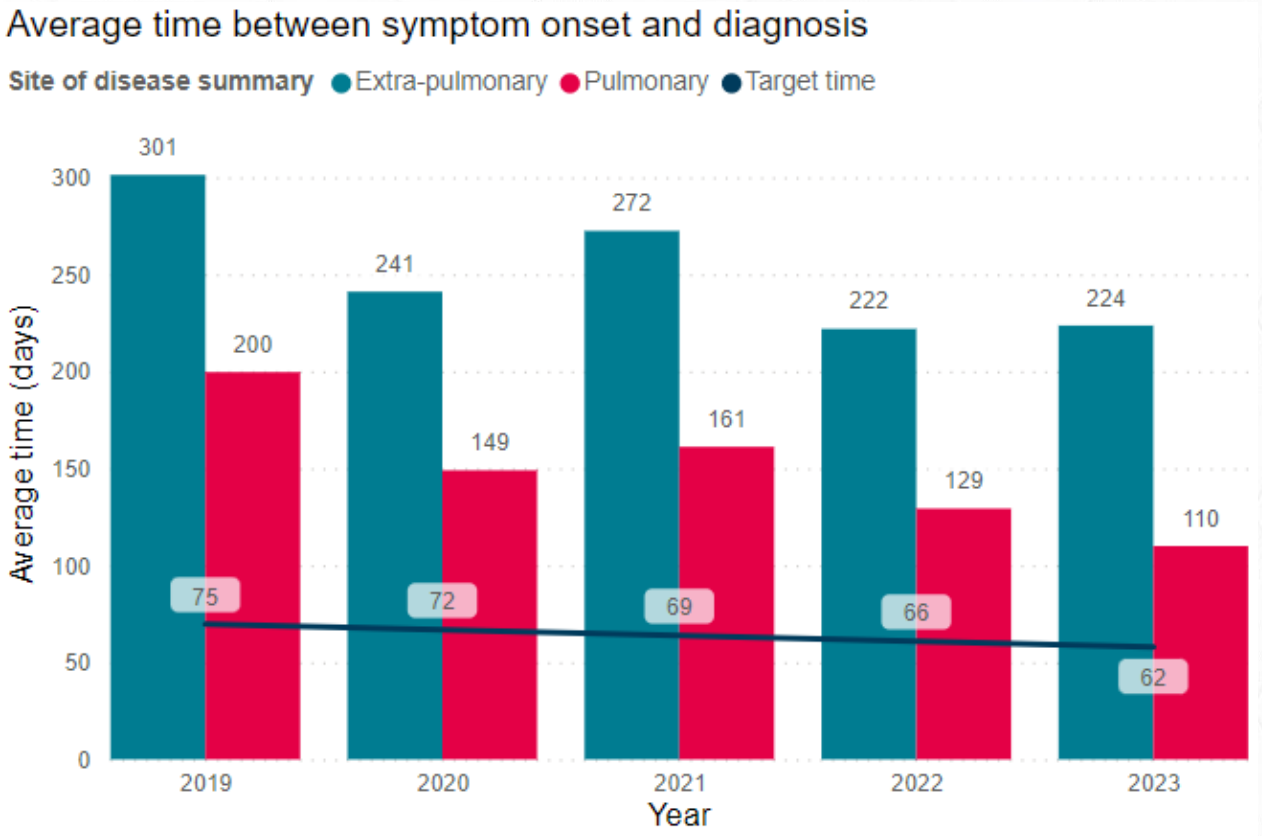
| 2023 | 392 cases | 5.9 per 100,000 |
|---|---|---|

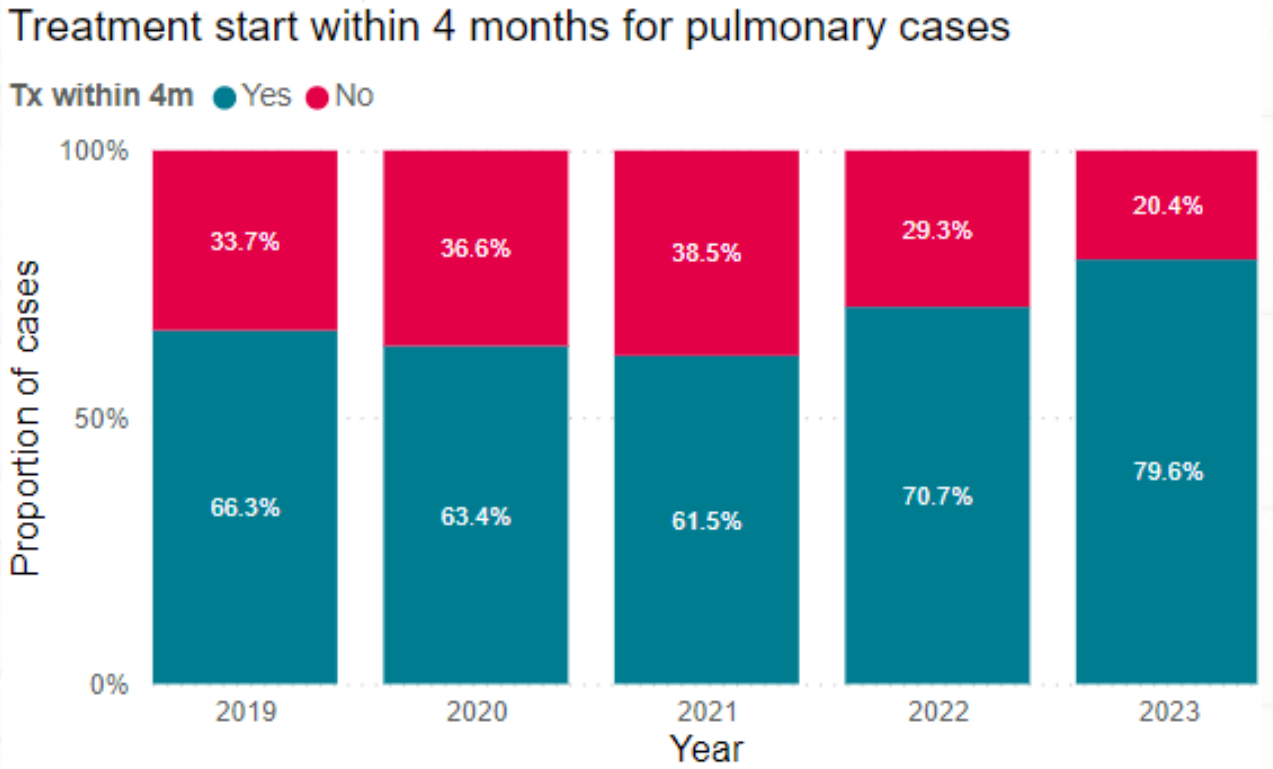
Note: data extracted from NTBS on 8 February 2024; cases from 1 January 2019 to 31 December 2023. Data from NTBS are provisional and subject to change, and therefore not for publication or onward dissemination

- Incidence in the East of England is not declining, but remains below the target rate to meet WHO elimination target.
- Substantial variation in incidence by Local Authority
- Luton and Peterborough remain peak areas
- Incidence in 2023 increased in Bedford, Essex, Luton, Milton Keynes, Norfolk, Peterborough and Southend-on-Sea

# Diagnostic delay

Note: data extracted from NTBS on 8 February 2024; cases from 1 January 2019 to 31 December 2023. Data from NTBS are provisional and subject to change, and therefore not for publication or onward dissemination

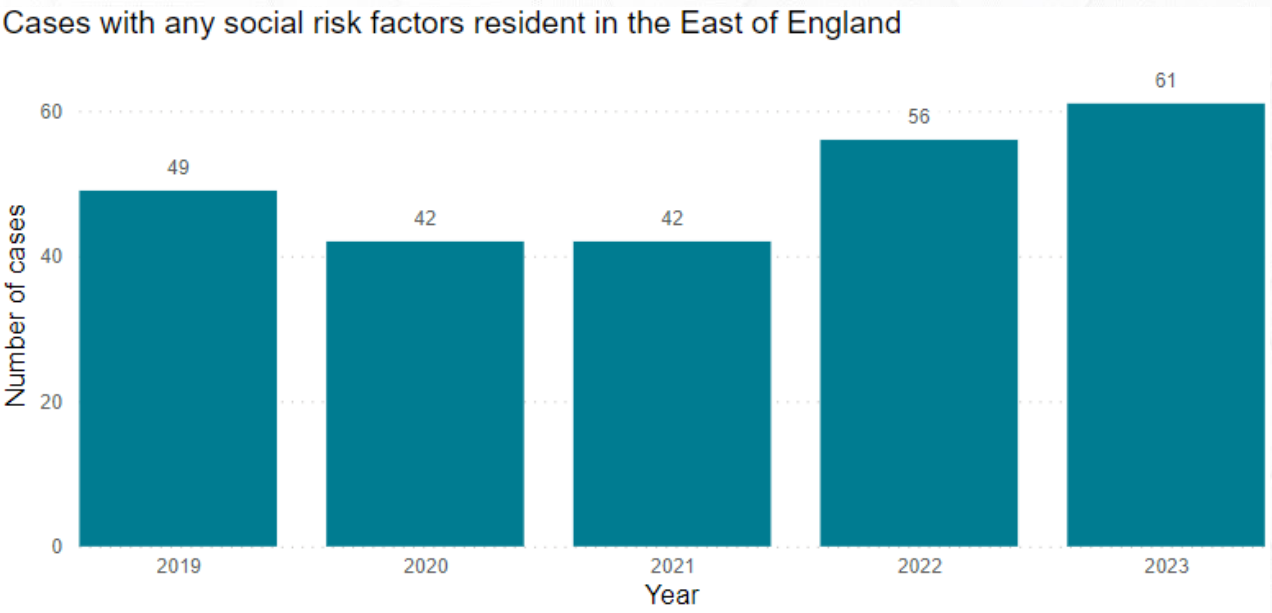



- **Declining average time between symptom onset and diagnosis for pulmonary cases (110 days in 2023)**
- **Still almost double the target time (62 days)**
- **Average time to diagnosis is double for extra-pulmonary cases**

- **Proportion of pulmonary cases with a treatment delay of 4 or more months is reducing by almost 10% per year since 2021**

# Social risk factors




- Social risk factors reported more frequently since 2021.
- TB services in low incidence areas seeing disproportionately more complex cases

Cases with any social risk factor treated by East of England TB Service (since 2019)

| ICB area | No | Yes |
|---|---|---|
| **NHS Bedfordshire, Luton & Milton Keynes ICB** | **88.84%** | **11.16%** |
| Bedford Hospital | 80.00% | 20.00% |
| Luton & Dunstable Hospital | 89.72% | 10.28% |
| Milton Keynes University Hospital | 91.96% | 8.04% |
| **NHS Cambridgeshire & Peterborough ICB** | **89.78%** | **10.22%** |
| Addenbrooke's Hospital | 91.18% | 8.82% |
| North West Anglia Foundation Trust | 88.21% | 11.79% |
| **NHS Hertfordshire & West Essex ICB** | **90.76%** | **9.24%** |
| East & North Hertfordshire Hospitals | 87.34% | 12.66% |
| Princess Alexandra Hospital | 92.19% | 7.81% |
| West Hertfordshire Hospitals | 91.81% | 8.19% |
| **NHS Mid & South Essex ICB** | **86.85%** | **13.15%** |
| Basildon & Thurrock University Hospitals | 84.88% | 15.12% |
| Broomfield Hospital | 100.00% | |
| Southend Hospital | 81.71% | 18.29% |
| **NHS Norfolk & Waveney ICB** | **78.13%** | **21.88%** |
| James Paget Hospital | 68.89% | 31.11% |
| Norfolk & Norwich University Hospital | 88.42% | 11.58% |
| Queen Elizabeth Hospital, King's Lynn | 74.36% | 25.64% |
| **NHS Suffolk & North East Essex ICB** | **80.15%** | **19.85%** |
| Colchester Hospital | 82.35% | 17.65% |
| Ipswich Hospital | 75.00% | 25.00% |
| West Suffolk Hospital | 85.71% | 14.29% |
| **Total** | **87.17%** | **12.83%** |

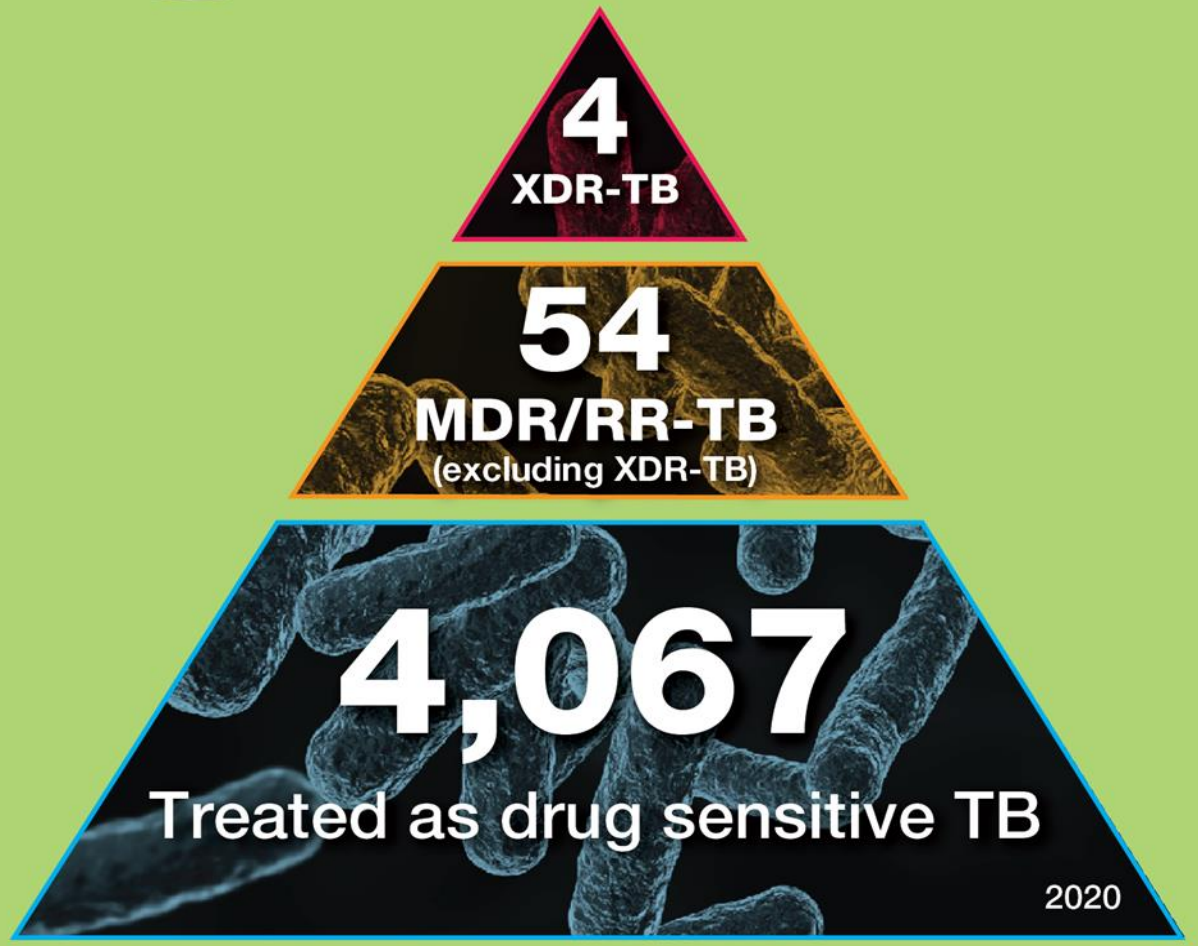
Note: data extracted from NTBS on 8 February 2024; cases from 1 January 2019 to 31 December 2023. Data from NTBS are provisional and subject to change, and therefore not for publication or onward dissemination

# Improve TB diagnosis to...

## Reduce delays
in access, diagnosis and care

**32%** of persons with pulmonary TB in 2020 experienced a delay of more than 4 months before starting treatment

## Reduce spread
of multi-drug resistant TB



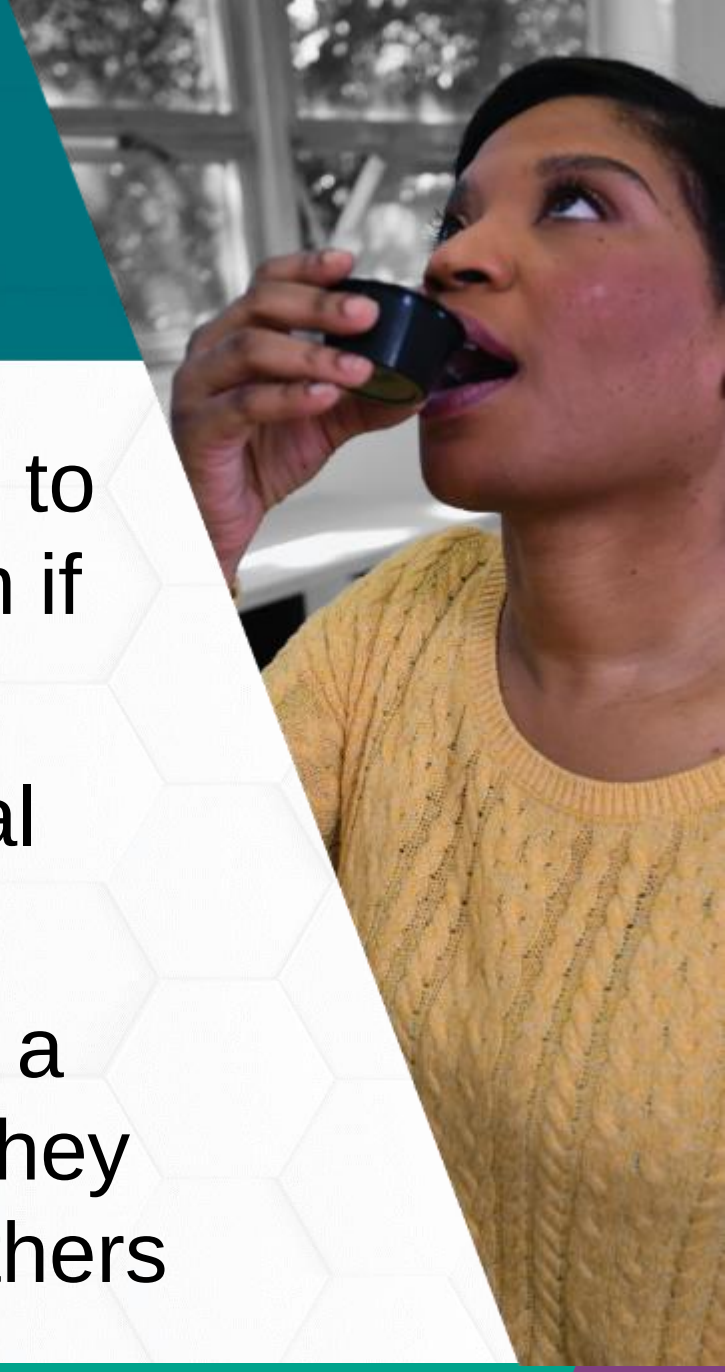

UK Health Security Agency

# People Vaccinated with BCG Can Still Get TB Disease

## Bacille Calmette-Guérin (BCG)

- Is a vaccine for TB disease
- The TB vaccine is not widely used in the UK
- Is given to infants who are at risk of getting TB
- Protects against severe forms of active TB in children
- Protection from TB goes away as people get older

# Treating TB Disease Protects both the patients and Others around them



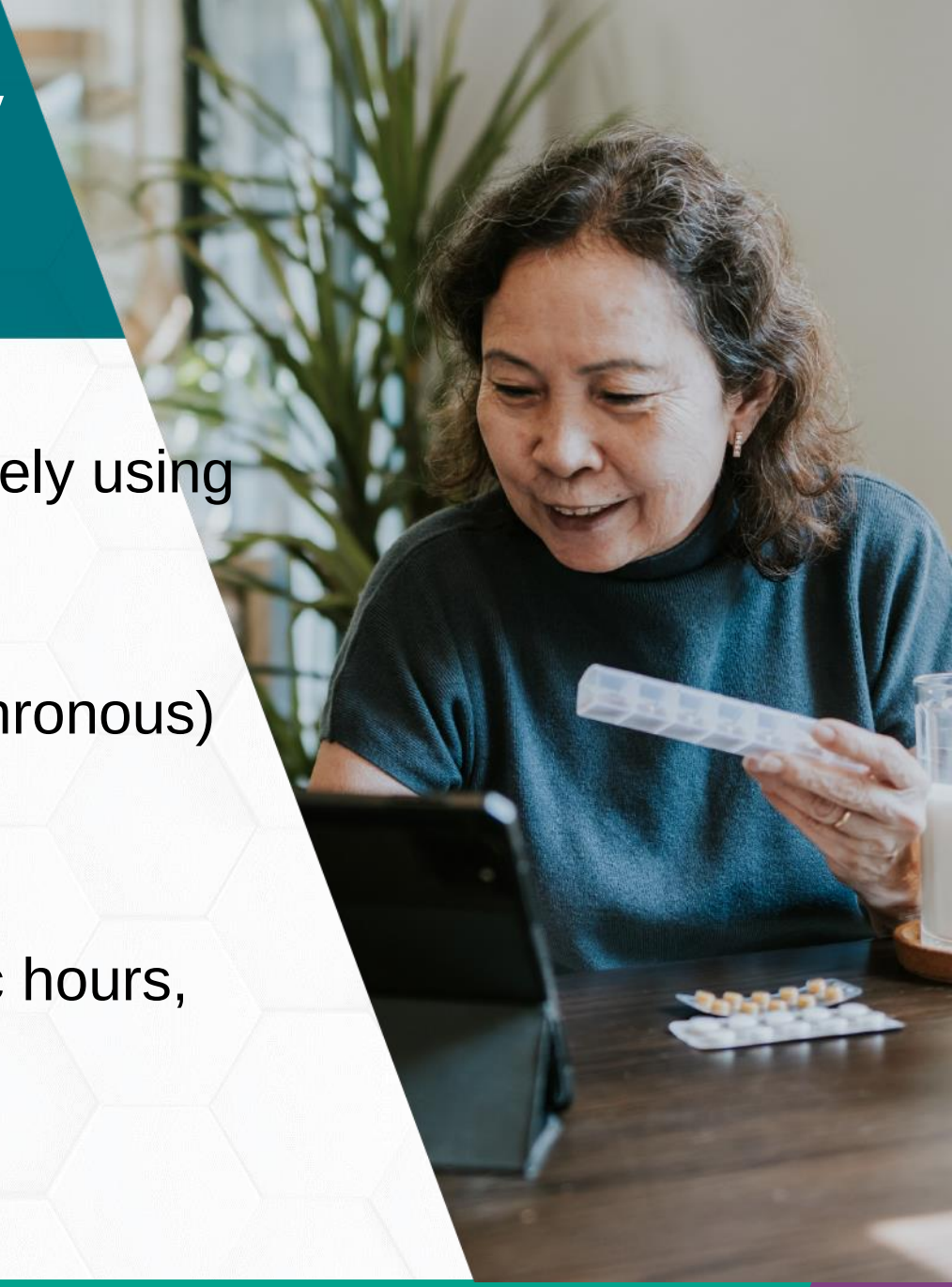
- People with TB disease can pass TB germs to their family, friends, and others around them if they don’t take TB medicine the right way
- People with TB disease need to take several medicines when they start treatment
- After taking TB medicine for several weeks, a doctor will be able to tell TB patients when they are no longer able to spread TB germs to others

# DOT (Directly Observed Therapy

- Is the most effective strategy for ensuring that patients stay on track with their treatment – high risk
- A health care worker will meet with the patient to watch them swallow each dose of the prescribed drugs
- During DOT visits, the health care worker will check in with the patient to:
  - answer questions
  - make sure the treatment is working
  - watch for side effects

# Video Directly Observed Therapy (vDOT)

- Alternative method to in-person DOT
- The health care worker meets with the patient remotely using a video-enabled device to observe them taking their medication
- Can be done live (synchronous) or recorded (asynchronous)
- Gives patients more flexibility and autonomy as they complete their treatment
- Facilitates patient monitoring outside of normal clinic hours, during an emergency, or when patients are traveling



UK Health Security Agency

# Thank you!