Tuberculosis in England
2018 report
(presenting data to end of 2017)

Tables and figures slide set
Number of TB notifications and rates, England, 1971-2017

Source: Enhanced Tuberculosis Surveillance system (ETS), Office for National Statistics (ONS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number of TB notifications and rates, England, 2000-2017

5,102 people per 100,000 population

Source: Enhanced Tuberculosis Surveillance system (ETS), Office for National Statistics (ONS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number of TB notifications and rates by TB control board, England, 2017

Number of people with TB

- Lowest number
- Medium-low number
- Medium number
- Medium-high number
- Highest number

* per 100,000 population
Number of TB notifications and rates by PHE Centre, England, 2017

Source: Enhanced Tuberculosis Surveillance system (ETS), Office for National Statistics (ONS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Three-year average TB rates by local authority district\textsuperscript{a}, England, 2015-2017

57\% of LAs had a 3-year average rate of <5.0 per 100,000

\textsuperscript{a}PHEC boundaries are outlined in black.
Three-year average TB rates by clinical commissioning group, England, 2015-2017

48.2% of CCGs had a 3-year average rate of <5.0 per 100,000
Number of TB notifications and rates by place of birth, England, 2000-2017

In 2016, 26.4% of cases were UK born and 73.6% non-UK born.

Please note: confidence intervals around the UK born population are small and therefore not visible.
Number of TB notifications and rates by age group and place of birth, England, 2017

Source: Enhanced Tuberculosis Surveillance system (ETS), Labour Force Survey (LFS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Country of birth and time from UK entry to TB notification, England, 2017

<table>
<thead>
<tr>
<th>Country of birth</th>
<th>Number of people</th>
<th>Proportion of people (%)(^a)</th>
<th>Median time since entry to UK (IQR)(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>1,454</td>
<td>29.4</td>
<td>-</td>
</tr>
<tr>
<td>India</td>
<td>882</td>
<td>17.9</td>
<td>9 (3-19)</td>
</tr>
<tr>
<td>Pakistan</td>
<td>507</td>
<td>10.3</td>
<td>14 (5-36)</td>
</tr>
<tr>
<td>Romania</td>
<td>206</td>
<td>4.2</td>
<td>2 (1-4)</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>139</td>
<td>2.8</td>
<td>12 (6-25)</td>
</tr>
<tr>
<td>Somalia</td>
<td>130</td>
<td>2.6</td>
<td>12 (7-18)</td>
</tr>
<tr>
<td>Eritrea</td>
<td>98</td>
<td>2.0</td>
<td>3 (1-8)</td>
</tr>
<tr>
<td>Nigeria</td>
<td>97</td>
<td>2.0</td>
<td>7 (4-14)</td>
</tr>
<tr>
<td>Nepal</td>
<td>95</td>
<td>1.9</td>
<td>6 (2-8)</td>
</tr>
<tr>
<td>Philippines</td>
<td>79</td>
<td>1.6</td>
<td>11 (6-15)</td>
</tr>
<tr>
<td>Poland</td>
<td>73</td>
<td>1.5</td>
<td>9 (4-11)</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>70</td>
<td>1.4</td>
<td>15 (12-17)</td>
</tr>
<tr>
<td>Afghanistan</td>
<td>70</td>
<td>1.4</td>
<td>4 (1-15)</td>
</tr>
<tr>
<td>Sudan</td>
<td>64</td>
<td>1.3</td>
<td>1 (0-4)</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>53</td>
<td>1.1</td>
<td>15 (8-18)</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>53</td>
<td>1.1</td>
<td>2 (1-5)</td>
</tr>
<tr>
<td>Kenya</td>
<td>52</td>
<td>1.1</td>
<td>20 (10-32)</td>
</tr>
<tr>
<td>Lithuania</td>
<td>49</td>
<td>1.0</td>
<td>6 (4-9)</td>
</tr>
<tr>
<td>Other (&lt;1%)</td>
<td>768</td>
<td>15.5</td>
<td>11 (3-20)</td>
</tr>
<tr>
<td><strong>Total(^a)</strong></td>
<td><strong>4,939</strong></td>
<td><strong>100.0</strong></td>
<td><strong>9 (3-18)</strong></td>
</tr>
</tbody>
</table>

\(^a\) Where country of birth was known  
\(^b\) Years, IQR refers to interquartile range

Source: Enhanced Tuberculosis Surveillance system (ETS)  
Data extracted: April 2018  
Prepared by: TB Unit, National Infection Service, Public Health England
Trend in the number of people with TB for the top five countries of birth\textsuperscript{a} for those born outside the UK, England, 2008-2017

\textsuperscript{a} Five most frequent countries of birth in 2017
Time between entry to the UK and TB notification for people born outside the UK, England, 2008-2017

Proportion of people (%)

- <2 years
- 2-5 years
- 6-10 years
- 11+ years

Source: Enhanced Tuberculosis Surveillance system (ETS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number of TB notifications and rates by place of birth and ethnic group, England, 2017

Please note: rates by ethnic group are displayed as labels.
Number of people with TB born in the UK by ethnic group, England, 2000-2017

Source: Enhanced Tuberculosis Surveillance system (ETS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England

- People from Black-Caribbean, Black-African and Black-Other ethnic groups were grouped as ‘Black’
- People from Indian, Pakistani and Bangladeshi ethnic groups were grouped as ‘South Asian’
- People from Mixed/Other and Chinese ethnic groups were grouped as ‘Mixed/other’
Number of people with TB by site of disease, England, 2017

5,087 people with TB where site of disease was known:
- 2,767 (54.4%) had pulmonary disease
- 2,950 (58.0%) had extra-pulmonary disease

Extra-pulmonary only: 2,320 (45.6%)
Pulmonary only: 2,137 (42.0%)
Pulmonary and extra-pulmonary: 630 (12.4%)

Source: Enhanced Tuberculosis Surveillance system (ETS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
**Number of people with TB by site of disease, England, 2017**

<table>
<thead>
<tr>
<th>Site of disease&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Number of people</th>
<th>Percentage&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pulmonary</td>
<td>2,767</td>
<td>54.4</td>
</tr>
<tr>
<td>Miliary</td>
<td>135</td>
<td>2.7</td>
</tr>
<tr>
<td>Laryngeal</td>
<td>13</td>
<td>0.3</td>
</tr>
<tr>
<td>Extra-pulmonary</td>
<td>2,950</td>
<td>58.0</td>
</tr>
<tr>
<td>Extra-thoracic lymph nodes</td>
<td>1,050</td>
<td>20.6</td>
</tr>
<tr>
<td>Intra-thoracic lymph nodes</td>
<td>637</td>
<td>12.5</td>
</tr>
<tr>
<td>Unknown extra-pulmonary</td>
<td>364</td>
<td>7.2</td>
</tr>
<tr>
<td>Pleural</td>
<td>439</td>
<td>8.6</td>
</tr>
<tr>
<td>Other extra-pulmonary</td>
<td>410</td>
<td>8.1</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>232</td>
<td>4.6</td>
</tr>
<tr>
<td>Bone – spine</td>
<td>195</td>
<td>3.8</td>
</tr>
<tr>
<td>Bone – not spine</td>
<td>113</td>
<td>2.2</td>
</tr>
<tr>
<td>CNS – meningitis</td>
<td>112</td>
<td>2.2</td>
</tr>
<tr>
<td>CNS – other</td>
<td>108</td>
<td>2.1</td>
</tr>
<tr>
<td>Genitourinary</td>
<td>76</td>
<td>1.5</td>
</tr>
<tr>
<td>Cryptic disseminated</td>
<td>38</td>
<td>0.7</td>
</tr>
</tbody>
</table>

<sup>a</sup> With or without disease at another site

<sup>b</sup> Proportion of people with TB for which sites of disease were known (5,087); total exceeds 100% due to disease at more than one site

CNS - Central Nervous System

Source: Enhanced Tuberculosis Surveillance system (ETS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Rate of TB in children (<15 years) born in the UK, England, 2000-2017

Source Enhanced Tuberculosis Surveillance system (ETS), Office for National Statistics (ONS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number and proportion of people with TB clustered using WGS by place of birth and number of new clusters, North and Central England, 2017

<table>
<thead>
<tr>
<th>SNP cut off applied</th>
<th>Clustered</th>
<th>Non-UK born clustered</th>
<th>UK born clustered</th>
<th>Clusters</th>
<th>Clusters by cluster size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%^a</td>
<td>n</td>
<td>%^a</td>
<td>n</td>
</tr>
<tr>
<td>12 SNPs</td>
<td>268</td>
<td>23.3</td>
<td>99</td>
<td>13.2</td>
<td>166</td>
</tr>
<tr>
<td>5 SNPs</td>
<td>218</td>
<td>18.9</td>
<td>82</td>
<td>10.9</td>
<td>134</td>
</tr>
<tr>
<td>2 SNPs</td>
<td>173</td>
<td>15.0</td>
<td>68</td>
<td>9.1</td>
<td>103</td>
</tr>
</tbody>
</table>

WGS was rolled out in North and Central England in December 2016. This table displays the first year of data for these areas.

^a Of the people who have culture confirmed TB with an isolate sequenced of sufficient quality to report relatedness, denominator restricted by place of birth for latter groupings.
Proportion of people with pulmonary TB by time from symptom onset to treatment start by place of birth, England, 2013-2017
Outcomes at 12 months for people with drug sensitive TB with expected treatment duration <12 months\textsuperscript{a}, England, 2007-2016

\textsuperscript{a} Excludes people in the drug resistant cohort and those with CNS, spinal, miliary or cryptic disseminated TB

\textsuperscript{b} Not evaluated includes unknown and transferred out
Treatment outcomes in the drug sensitive cohort, England, 2016

Outcome at 12 months for people with expected treatment duration <12 months\(^a\)

- Treatment completed: 84.4%
- Died: 5.0%
- Lost to follow-up: 3.9%
- Still on treatment: 4.4%
- Treatment stopped: 0.9%
- Not evaluated\(^b\): 1.3%

\(n = 4,975\)

Last recorded outcome for people with expected treatment duration >12 months\(^c\)

- Treatment completed: 72.6%
- Died: 9.4%
- Lost to follow-up: 9.1%
- Still on treatment: 3.8%
- Treatment stopped: 4.4%
- Not evaluated\(^b\): 0.7%

\(n = 573\)

\(^a\) Excludes people in the drug resistant cohort and those with CNS, spinal, miliary or cryptic disseminated TB

\(^b\) Not evaluated includes unknown and transferred out

\(^c\) Excludes people in the drug resistant cohort and only includes people with drug sensitive CNS, spinal, miliary or cryptic disseminated TB
Number and proportion\textsuperscript{a} of people with TB with initial drug resistance, England, 2000-2017

\textsuperscript{a} People with culture confirmed TB with a result (DST or WGS) for isoniazid and rifampicin
### Most frequent countries of birth of people with drug resistant TB, England, 2017

<table>
<thead>
<tr>
<th>Country of birth</th>
<th>Total number&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Isoniazid resistance without MDR-TB</th>
<th>MDR/RR-TB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>UK</td>
<td>838</td>
<td>48</td>
<td>5.7</td>
</tr>
<tr>
<td>India</td>
<td>502</td>
<td>40</td>
<td>8.0</td>
</tr>
<tr>
<td>Pakistan</td>
<td>317</td>
<td>22</td>
<td>6.9</td>
</tr>
<tr>
<td>Romania</td>
<td>148</td>
<td>4</td>
<td>2.7</td>
</tr>
<tr>
<td>Somalia</td>
<td>80</td>
<td>4</td>
<td>5.0</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>64</td>
<td>4</td>
<td>6.3</td>
</tr>
<tr>
<td>Philippines</td>
<td>59</td>
<td>8</td>
<td>13.6</td>
</tr>
<tr>
<td>Lithuania</td>
<td>38</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

<sup>a</sup> Included if four or more people had either isoniazid resistance without MDR-TB or MDR/RR-TB, ordered by number of people with a result (DST or WGS) for isoniazid and rifampicin

<sup>b</sup> People with culture confirmed TB with a result (DST or WGS) for isoniazid and rifampicin

Source: Enhanced Tuberculosis Surveillance system (ETS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number and proportion of people with MDR/RR-TB\textsuperscript{a} with second-line drug resistance by most frequent country of birth, England, 2013-2017

<table>
<thead>
<tr>
<th>Country</th>
<th>Resistant to all 1st line drugs\textsuperscript{b}</th>
<th>Resistant to ≥ 1 second line drug\textsuperscript{b}</th>
<th>Resistant to ≥ 1 injectable drug\textsuperscript{b}</th>
<th>Resistant to ≥ 1 fluoroquinolone\textsuperscript{b}</th>
<th>Extensively drug resistant-TB\textsuperscript{bc}</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>13</td>
<td>28</td>
<td>3</td>
<td>21</td>
<td>3</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>9</td>
<td>20</td>
<td>11</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Lithuania</td>
<td>2</td>
<td>23</td>
<td>15</td>
<td>15</td>
<td>4</td>
</tr>
<tr>
<td>Pakistan</td>
<td>2</td>
<td>20</td>
<td>2</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>

\textsuperscript{a} People with culture confirmed TB with results (DST or WGS) for isoniazid and rifampicin

\textsuperscript{b} Denominators only include people with results for the drugs in question

\textsuperscript{c} Resistant to both a fluoroquinolone and an injectable
TB outcome at 24 months for drug resistant cohort\textsuperscript{a}, England, 2015

Last recorded TB outcome for drug resistant cohort\textsuperscript{a}, England, 2015

\begin{itemize}
  \item Treatment completed: 58.2\%
  \item Died: 1.5\%
  \item Lost to follow-up: 7.5\%
  \item Still on treatment: 7.5\%
  \item Treatment stopped: 13.4\%
  \item Not evaluated\textsuperscript{b}: 1.5\%
\end{itemize}

\textbf{n} = 67

\textsuperscript{a} Includes initial and acquired MDR/RR-TB and people treated with a second line regimen without phenotypic DST results or WGS resistance predictions

\textsuperscript{b} Not evaluated includes unknown and transferred

Source: Enhanced Tuberculosis Surveillance system (ETS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Treatment completion for the drug resistant TB cohort\textsuperscript{a}, England, 2006-2015

\textsuperscript{a} Includes people with initial and acquired MDR/RR-TB and people treated with a second line regimen

Source: Enhanced Tuberculosis Surveillance system (ETS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
In 2017, 12.6% of people with TB had at least one SRF.
Proportion of people with TB (≥15 years) with social risk factors by place of birth, England, 2017

Source: Enhanced Tuberculosis Surveillance system (ETS)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number of people with TB (≥15 years) with at least one SRF\(^a\) by local authority, England, 2010-2017

\(^a\) SRF refers to those with current alcohol misuse, current or history of homelessness, imprisonment and drug misuse. PHEC boundaries are outlined in black.
Proportion of people with TB (≥ 15 years) with at least one social risk factor by PHE Centre, England, 2013-2017
Last recorded TB outcome for the entire drug sensitive cohort by social risk factor\textsuperscript{a}, England, 2016

\textbf{With at least one social risk factor}

- Treatment completed: 80.0%
- Died: 3.0%
- Lost to follow-up: 6.5%
- Still on treatment: 6.3%
- Treatment stopped: 1.1%
- Not evaluated\textsuperscript{b}: 3.0%

\textit{n = 525}

\textbf{With no social risk factor}

- Treatment completed: 87.7%
- Died: 4.6%
- Lost to follow-up: 3.3%
- Still on treatment: 2.3%
- Treatment stopped: 1.0%
- Not evaluated\textsuperscript{b}: 1.2%

\textit{n = 4,292}

\textsuperscript{a} Excludes people with initial and amplified rifampicin resistant TB, MDR-TB, and those treated with an MDR-TB regimen

\textsuperscript{b} Not evaluated includes unknown and transferred out

Source: Enhanced Tuberculosis Surveillance system (ETS)

Data extracted: April 2018

Prepared by: TB Unit, National Infection Service, Public Health England
Rate of TB by deprivation decile, England, 2017

Most deprived 10% of the population

Least deprived 10% of the population

Rate (per 100,000)

Deprivation decile

Rate 95% CI England 2017 rate

Source: Enhanced Tuberculosis Surveillance system (ETS), Index of Multiple Deprivation (IMD 2010)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number and proportion of people with TB who have HIV co-infection\textsuperscript{a}, England, 2001-2017

\textsuperscript{a} Includes people with TB-HIV co-infection aged 15 years and older.
\textsuperscript{b} Proportion is calculated using the number of TB notifications with HIV co-infection plus the number who are un-notified with an MTBC isolate which matched to a person with HIV as the numerator, and the number of all TB notifications (with or without HIV co-infection) plus the number of un-notified TB isolates which matched to a person with HIV as the denominator.
Number of people notified with TB-HIV co-infection by age group\textsuperscript{a}, England, 2001-2017

\textsuperscript{a} Based on age at TB notification

Source: Enhanced Tuberculosis Surveillance system (ETS), Survey of prevalent HIV infections diagnosed (SOPHID), HIV & AIDS new diagnoses database (HANDD)
Data extracted: April 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number and rate of TB cases detected in high incidence countries through the UK pre-entry screening programme, 2006 to 2017

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For countries which became part of pre-entry screening programme during the global roll out, there is a possibility of under-ascertainment in 2012 and 2013, as clinics were establishing reporting systems during this transition phase.

As of 1st May 2018, 794 sputum samples are pending and the rate may increase when final results are available.

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Source: UK TB pre-entry screening data
Data extracted: May 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number of LTBI tests by CCG and year, England, 2016 - 2017

London

Source: LTBI Database
Data extracted: June 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Number of people tested for LTBI by sex and age group, 2016-2017

Source: LTBI Database
Data extracted: June 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Proportion of people that tested positive for LTBI by CCG and year, 2016 - 2017

Proportion (%) positive for LTBI by CCG
No tests reported - CCG not eligible
1 - 14
15 - 20
21 - 30
>30
No tests reported - CCG eligible

Source: LTBI Database
Data extracted: June 2018
Prepared by: TB Unit, National Infection Service, Public Health England
Proportion of people that tested positive for LTBI by sex and age group, 2016-2017

Source: LTBI Database
Data extracted: June 2018
Prepared by: TB Unit, National Infection Service, Public Health England