



Public Health
England

Protecting and improving the nation's health

Reports of cases of tuberculosis to enhanced tuberculosis surveillance systems: UK, 2000 to 2019

Official Statistics



About Public Health England

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Notes

Tuberculosis definition

All new tuberculosis (TB) cases (including cases diagnosed post-mortem) that meet one of the two following case definitions are reported:

- Culture confirmed case: culture confirmed disease, with speciation confirming *Mycobacterium tuberculosis* complex (*M. tuberculosis*, *M. bovis*, *M. africanum* or *M. microti*)
- clinically diagnosed case: in the absence of culture confirmation, a case that meets the following criteria:
 - a clinician's judgement that the patient's clinical and/or radiological signs and/or symptoms are compatible with active TB, *and*
 - a clinician's decision to treat the patient with a full course of anti-TB therapy for active TB

Enhanced surveillance of tuberculosis

Enhanced Tuberculosis Surveillance (ETS) was introduced in January 1999 in England and Wales and the following year in Northern Ireland. The equivalent scheme in Scotland, Enhanced Surveillance of Mycobacterial Infections (ESMI), was introduced in 2000. Data from the two systems is compiled for the purpose of UK reporting.

Clinical teams provide information on TB cases either directly through the web-based ETS system entered at the clinic, or on a case report form entered onto the system at the Health Protection Team level. Data includes notification details, demographic information, clinical and microbiological information.

Data from all TB isolates identified in UK Mycobacteria Reference Laboratories (excluding Scotland) is routinely imported into ETS and matched to case notifications using patient identifiers common to both the laboratory isolate and the case notification. In addition, external to the system, an annual probabilistic matching process based on the patient identifiers is undertaken to identify additional matches. TB isolates in Scotland are identified by the Scottish Mycobacteria Reference Laboratory and this data is not matched using this method.

Data sources

The TB data for England, Wales and Northern Ireland presented in this report is from ETS, other than in London where cases are reported to the London TB Register (LTBR). Data for Scotland is from ESMI.

The population data used is sourced from the Office for National Statistics (ONS), incorporating data from the National Records of Scotland and Northern Ireland Statistics and Research Agency.

Data was extracted from ETS at the beginning of March 2020 and cleaned and validated. Data for Scotland and Northern Ireland in this report is provisional and subject to further validation, and thus may differ slightly from data presented in Scottish and Irish reports.

PHE produces detailed public health reports with TB data for England, which are available at:

<https://www.gov.uk/government/collections/tuberculosis-and-other-mycobacterial-diseases-diagnosis-screening-management-and-data>

Reports produced by the Public Health Agency Northern Ireland are available at:

<http://www.publichealth.hscni.net/directorate-public-health/health-protection/tuberculosis>

Reports produced by Public Health Wales are available at:

<http://www.wales.nhs.uk/sitesplus/888/page/43877>

Reports produced by Health Protection Scotland are available at:

<https://www.hps.scot.nhs.uk/a-to-z-of-topics/tuberculosis/>

Data type and methodology

TB cases were reported by area of residence and by calendar year.

Overall TB rates per 100,000 population, as well as those by area of reporting, were calculated using the mid-year population estimates provided by the ONS. Average annual rates per 100,000 for the three-year period were calculated by dividing the numerator (the number of TB notifications in the three-year period) by the denominator (the sum of the mid-year population estimates for the same three-year period) and multiplying by 100,000. A 95% confidence interval for incidence was obtained assuming a Poisson distribution.

For the purposes of TB outcome reporting, the drug-sensitive cohort is defined as all TB cases, excluding those with multi-drug resistant/rifampicin resistant TB (MDR/RR-TB)

(initial or acquired), and those treated with a second line regimen for MDR/RR-TB. TB outcomes are reported at 12 months for drug-sensitive cases with an expected duration of treatment of less than 12 months. This group excludes cases with CNS disease, who have an expected duration of treatment of 12 months. In addition, those with spinal, cryptic disseminated or miliary disease are excluded from this group, as CNS involvement cannot be reliably ruled out for the purposes of reporting. The last recorded outcome is reported for the entire drug-sensitive cohort.

Health Protection Scotland (HPS) aligned with the World Health Organization (WHO) treatment outcome definitions in 2015, and outcomes in this report may differ to those in the regional report.

Statistical analysis was carried out using Stata 15.

Glossary

Acquired resistance: resistance identified on repeat multi after one month of the first specimen date. Cases with a change from a sensitive to resistant result following treatment start are reclassified as acquired resistance, even if this is within the one-month period

CNS: central nervous system

CI: confidence interval (95% confidence intervals used)

DR cohort: drug-resistant cohort is defined as cases that are culture confirmed with initial and/or acquired multi-drug resistant/rifampicin resistant TB (MDR/RR-TB), as well as those treated with a second-line regimen for MDR/RR-TB without phenotypic DST results or WGS resistance predictions

ESMI: Enhanced Surveillance of Mycobacterial Infections

ETS: Enhanced Tuberculosis Surveillance system

Initial resistance: a cultured isolate resistant to a particular drug within one month of the first specimen date

Last recorded outcome: last known outcome, irrespective of when it occurred

LTBR: London TB Register

MDR-TB: multi-drug resistant TB is defined as resistance to at least isoniazid and rifampicin, with or without resistance to other drugs

MDR/RR-TB: multi-drug resistant/rifampicin resistant TB is defined as resistance to rifampicin including MDR-TB cases

ONS: Office for National Statistics

XDR-TB: extensively drug-resistant TB is defined as resistance to isoniazid and rifampicin (MDR-TB), at least one injectable agent (capreomycin, kanamycin or amikacin) and at least one fluoroquinolone (moxifloxacin, ofloxacin or ciprofloxacin)

Table 1: Number of TB case notifications, rates and annual percentage change, UK, 2000-2019

Year	Total		Annual change in case numbers (%)	Annual change in rate (%)
	Number of cases	Rate per 100,000 (95% CI ^a)		
2000	6,686	11.4 (11.1 - 11.6)	-	-
2001	6,760	11.4 (11.2 - 11.7)	1.1%	0.0%
2002	7,291	12.3 (12.0 - 12.6)	7.9%	7.9%
2003	7,219	12.1 (11.8 - 12.4)	-1.0%	-1.6%
2004	7,590	12.7 (12.4 - 12.9)	5.1%	5.0%
2005	8,283	13.7 (13.4 - 14.0)	9.1%	7.9%
2006	8,307	13.7 (13.4 - 14.0)	0.3%	0.0%
2007	8,259	13.5 (13.2 - 13.8)	-0.6%	-1.5%
2008	8,491	13.7 (13.4 - 14.0)	2.8%	1.5%
2009	8,870	14.2 (14.0 - 14.5)	4.5%	3.6%
2010	8,397	13.4 (13.1 - 13.7)	-5.3%	-5.6%
2011	8,919	14.1 (13.8 - 14.4)	6.2%	5.2%
2012	8,712	13.7 (13.4 - 14.0)	-2.3%	-2.8%
2013	7,871	12.3 (12.0 - 12.6)	-9.7%	-10.2%
2014	7,029	10.9 (10.6 - 11.1)	-10.7%	-11.4%
2015	6,228	9.6 (9.3 - 9.8)	-11.4%	-11.9%
2016	6,116	9.3 (9.1 - 9.6)	-1.8%	-3.1%
2017	5,531	8.4 (8.2 - 8.6)	-9.6%	-9.7%
2018	5,036	7.6 (7.4 - 7.8)	-8.9%	-9.5%
2019	5,132	7.7 (7.5 - 7.9)	1.9%	1.3%

^a CI - confidence interval

A 42.5% reduction in TB case numbers was observed between 2011 and 2018. In 2019, the number of cases increased by 1.9% giving a rate of 7.7 per 100,000 (95% CI 7.5-7.9) (Table 1).

Table 2: Number of TB case notifications and rates by country, UK, 2000-2019

Year	England		Scotland ^a		Wales		Northern Ireland ^a		UK	
	Number of cases	Rate per 100,000 (95% CI ^b)	Number of cases	Rate per 100,000 (95% CI ^b)	Number of cases	Rate per 100,000 (95% CI ^b)	Number of cases	Rate per 100,000 (95% CI ^b)	Number of cases	Rate per 100,000 (95% CI ^b)
2000	6,044	12.3 (12.0 - 12.6)	403	8.0 (7.2 - 8.8)	182	6.3 (5.4 - 7.2)	57	3.4 (2.6 - 4.4)	6,686	11.4 (11.1 - 11.6)
2001	6,169	12.5 (12.2 - 12.8)	351	6.9 (6.2 - 7.7)	183	6.3 (5.4 - 7.3)	57	3.4 (2.6 - 4.4)	6,760	11.4 (11.2 - 11.7)
2002	6,675	13.4 (13.1 - 13.8)	394	7.8 (7.0 - 8.6)	155	5.3 (4.5 - 6.2)	67	3.9 (3.1 - 5.0)	7,291	12.3 (12.0 - 12.6)
2003	6,631	13.3 (13.0 - 13.6)	367	7.2 (6.5 - 8.0)	164	5.6 (4.8 - 6.5)	57	3.3 (2.5 - 4.3)	7,219	12.1 (11.8 - 12.4)
2004	6,930	13.8 (13.5 - 14.1)	392	7.7 (7.0 - 8.5)	187	6.3 (5.4 - 7.3)	81	4.7 (3.8 - 5.9)	7,590	12.7 (12.4 - 12.9)
2005	7,658	15.1 (14.8 - 15.5)	365	7.1 (6.4 - 7.9)	185	6.2 (5.4 - 7.2)	75	4.3 (3.4 - 5.4)	8,283	13.7 (13.4 - 14.0)
2006	7,682	15.1 (14.7 - 15.4)	381	7.4 (6.7 - 8.2)	183	6.1 (5.3 - 7.1)	61	3.5 (2.7 - 4.5)	8,307	13.7 (13.4 - 14.0)
2007	7,577	14.7 (14.4 - 15.1)	409	7.9 (7.2 - 8.7)	204	6.8 (5.9 - 7.8)	69	3.9 (3.0 - 5.0)	8,259	13.5 (13.2 - 13.8)
2008	7,809	15.1 (14.7 - 15.4)	447	8.6 (7.8 - 9.4)	169	5.6 (4.8 - 6.5)	66	3.7 (2.9 - 4.7)	8,491	13.7 (13.4 - 14.0)
2009	8,112	15.5 (15.2 - 15.9)	486	9.3 (8.5 - 10.2)	213	7.0 (6.1 - 8.0)	59	3.3 (2.5 - 4.2)	8,870	14.2 (14.0 - 14.5)
2010	7,676	14.6 (14.3 - 14.9)	503	9.6 (8.7 - 10.4)	152	5.0 (4.2 - 5.8)	66	3.7 (2.8 - 4.7)	8,397	13.4 (13.1 - 13.7)
2011	8,280	15.6 (15.3 - 15.9)	447	8.4 (7.7 - 9.3)	131	4.3 (3.6 - 5.1)	61	3.4 (2.6 - 4.3)	8,919	14.1 (13.8 - 14.4)
2012	8,084	15.1 (14.8 - 15.4)	405	7.6 (6.9 - 8.4)	136	4.4 (3.7 - 5.2)	87	4.8 (3.8 - 5.9)	8,712	13.7 (13.4 - 14.0)
2013	7,266	13.5 (13.2 - 13.8)	390	7.3 (6.6 - 8.1)	142	4.6 (3.9 - 5.4)	73	4.0 (3.1 - 5.0)	7,871	12.3 (12.0 - 12.6)
2014	6,472	11.9 (11.6 - 12.2)	348	6.5 (5.8 - 7.2)	114	3.7 (3.0 - 4.4)	95	5.2 (4.2 - 6.3)	7,029	10.9 (10.6 - 11.1)
2015	5,735	10.5 (10.2 - 10.7)	316	5.9 (5.3 - 6.6)	116	3.7 (3.1 - 4.5)	61	3.3 (2.5 - 4.2)	6,228	9.6 (9.3 - 9.8)
2016	5,618	10.2 (9.9 - 10.4)	307	5.7 (5.1 - 6.4)	105	3.4 (2.8 - 4.1)	86	4.6 (3.7 - 5.7)	6,116	9.3 (9.1 - 9.6)
2017	5,066	9.1 (8.9 - 9.4)	291	5.4 (4.8 - 6.0)	104	3.3 (2.7 - 4.0)	70	3.7 (2.9 - 4.7)	5,531	8.4 (8.2 - 8.6)
2018	4,615	8.2 (8.0 - 8.5)	272	5.0 (4.4 - 5.6)	96	3.1 (2.5 - 3.7)	53	2.8 (2.1 - 3.7)	5,036	7.6 (7.4 - 7.8)
2019	4,725	8.4 (8.2 - 8.6)	236	4.3 (3.8 - 4.9)	100	3.2 (2.6 - 3.9)	71	3.7 (2.9 - 4.7)	5,132	7.7 (7.5 - 7.9)

^a Data for Scotland and Northern Ireland is provisional and subject to further validation

^b CI - confidence interval

Most TB cases in the UK were in England and the rate of TB was higher than the devolved administrations. In 2019, there were 4,725 cases in England giving a rate of TB of 8.4 per 100,000 (Table 2), the first increase in England since 2011. Scotland continued an annual decline in both numbers and rate of TB, with 236 cases in 2019 (4.3 per 100,000). There was a small increase in the number and rate of TB in Wales during 2019 giving a rate of 3.2 per 100,000. Northern Ireland has both a small number of cases and low rate of TB, with annual fluctuations. Following the lowest recorded TB rate of 2.8 per 100,000 in 2018, there was a 34.0% and 32.1% increase in the number of cases and rate in 2019, respectively.

Table 3: Number of TB case notifications and rates by PHE Centre^a, England, 2019

PHE Centre	Number of cases	Rate per 100,000 (95% CI^b)
London	1,665	18.6 (17.7 - 19.5)
West Midlands	574	9.7 (8.9 - 10.5)
North West	525	7.2 (6.6 - 7.8)
South East	508	5.7 (5.2 - 6.2)
East of England	422	6.5 (5.9 - 7.1)
Yorkshire and the Humber	358	6.5 (5.8 - 7.2)
East Midlands	356	7.4 (6.6 - 8.2)
South West	238	4.2 (3.7 - 4.8)
North East	79	3.0 (2.3 - 3.7)

^a Ordered by decreasing total number of cases in 2019

^b CI – confidence interval

As in previous years, the highest number of TB cases in England during 2019 was in London followed by the West Midlands PHEC. Increases in the number of TB case notifications were observed in the North West, South East, East of England, Yorkshire and the Humber, East Midlands and South West PHECs between 2018 and 2019.

Table 4: Three-year average number of TB case notifications and rates by upper tier local authority and local authority district, England, 2017-2019

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
London		1,750	19.7 (19.1-20.2)
	Barking and Dagenham	48	22.8 (19.3-26.8)
	Barnet	56	14.2 (12.1-16.5)
	Bexley	26	10.5 (8.3-13.1)
	Brent	124	37.6 (33.9-41.6)
	Bromley	21	6.2 (4.8-8.0)
	Camden	38	14.6 (12.1-17.6)
	City of London	2	19.2 (6.2-44.7)
	Croydon	70	18.1 (15.7-20.7)
	Ealing	128	37.5 (33.9-41.4)
	Enfield	55	16.4 (14.0-19.1)
	Greenwich	67	23.3 (20.2-26.8)
	Hackney	51	18.4 (15.6-21.6)
	Hammersmith and Fulham	24	13.2 (10.3-16.6)
	Haringey	49	18.0 (15.2-21.2)
	Harrow	69	27.7 (24.1-31.8)
	Havering	24	9.2 (7.2-11.6)
	Hillingdon	71	23.4 (20.4-26.8)
	Hounslow	84	31.2 (27.5-35.3)
	Islington	34	14.4 (11.7-17.4)
	Kensington and Chelsea	22	13.9 (10.7-17.7)
	Kingston upon Thames	12	7.0 (4.9-9.7)
	Lambeth	49	15.0 (12.6-17.6)
	Lewisham	50	16.4 (13.8-19.2)
	Merton	31	15.2 (12.3-18.6)
	Newham	158	45.0 (41.0-49.2)
	Redbridge	95	31.2 (27.7-35.0)
	Richmond upon Thames	12	6.3 (4.4-8.6)
	Southwark	55	17.3 (14.7-20.1)
	Sutton	23	11.1 (8.6-14.0)
	Tower Hamlets	66	20.8 (18.0-23.9)
	Waltham Forest	57	20.6 (17.6-24.0)
	Wandsworth	46	14.2 (11.9-16.8)
	Westminster	33	13.1 (10.7-16.0)

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
West Midlands		615	10.4 (10.0-10.9)
	Birmingham	229	20.1 (18.6-21.7)
	Coventry	76	20.8 (18.1-23.6)
	Dudley	22	6.8 (5.2-8.6)
	Herefordshire, County of	5	2.4 (1.3-4.1)
	Sandwell	64	19.7 (17.0-22.6)
	Shropshire	5	1.5 (0.8-2.4)
	Solihull	9	4.2 (2.8-6.1)
	Staffordshire	34	3.8 (3.1-4.7)
	Cannock Chase	3	3.3 (1.6-6.1)
	East Staffordshire	5	4.5 (2.6-7.3)
	Lichfield	0	0.3 (0.0-1.8)
	Newcastle-under-Lyme	7	5.2 (3.1-8.0)
	South Staffordshire	4	3.9 (2.1-6.6)
	Stafford	7	5.4 (3.4-8.2)
	Staffordshire Moorlands	3	2.7 (1.2-5.3)
	Tamworth	4	4.8 (2.4-8.6)
	Stoke-on-Trent	24	9.4 (7.3-11.8)
	Telford and Wrekin	9	5.1 (3.3-7.4)
	Walsall	41	14.6 (12.1-17.4)
	Warwickshire	28	4.8 (3.9-6.0)
	North Warwickshire	1	2.1 (0.6-5.3)
	Nuneaton and Bedworth	10	7.7 (5.2-11.1)
	Rugby	6	5.9 (3.5-9.2)
	Stratford-on-Avon	4	2.9 (1.4-5.1)
	Warwick	6	4.5 (2.7-7.0)
	Wolverhampton	51	19.6 (16.6-23.0)
	Worcestershire	19	3.2 (2.4-4.1)
	Bromsgrove	5	5.1 (2.8-8.4)
	Malvern Hills	1	1.3 (0.3-3.7)
	Redditch	3	3.1 (1.4-6.2)
	Worcester	4	3.6 (1.8-6.4)
	Wychavon	5	3.9 (2.2-6.5)
	Wyre Forest	1	1.3 (0.4-3.4)

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
North West		507	6.9 (6.6-7.3)
	Blackburn with Darwen	29	19.4 (15.6-24.0)
	Blackpool	7	5.3 (3.3-8.0)
	Bolton	36	12.7 (10.4-15.3)
	Bury	17	8.8 (6.5-11.5)
	Cheshire East	7	1.8 (1.1-2.8)
	Cheshire West and Chester	9	2.5 (1.7-3.7)
	Cumbria	9	1.7 (1.1-2.5)
	Allerdale	3	2.7 (1.2-5.4)
	Barrow-in-Furness	1	1.0 (0.1-3.6)
	Carlisle	2	2.2 (0.9-4.4)
	Copeland	0	0.5 (0.0-2.7)
	Eden	0	0.6 (0.0-3.5)
	South Lakeland	2	2.2 (0.9-4.6)
	Halton	2	1.3 (0.4-3.0)
	Knowsley	0	0.2 (0.0-1.2)
	Lancashire	71	5.8 (5.1-6.7)
	Burnley	8	8.7 (5.5-13.0)
	Chorley	2	1.7 (0.6-3.7)
	Fylde	1	1.3 (0.3-3.7)
	Hyndburn	6	7.4 (4.4-11.7)
	Lancaster	7	4.9 (3.0-7.4)
	Pendle	13	14.2 (10.1-19.4)
	Preston	21	14.8 (11.4-18.9)
	Ribble Valley	1	1.7 (0.3-4.9)
	Rossendale	4	5.2 (2.6-9.3)
	South Ribble	3	3.0 (1.4-5.5)
	West Lancashire	2	1.5 (0.5-3.4)
	Wyre	3	3.0 (1.4-5.5)
	Liverpool	38	7.7 (6.3-9.2)
	Manchester	113	20.7 (18.5-23.0)
	Oldham	40	16.8 (14.0-20.2)
	Rochdale	24	10.9 (8.5-13.7)
	Salford	23	8.9 (6.9-11.3)
	Sefton	7	2.5 (1.6-3.9)
	St. Helens	2	1.1 (0.4-2.4)
	Stockport	13	4.5 (3.2-6.1)
	Tameside	22	9.9 (7.7-12.6)
	Trafford	16	6.9 (5.1-9.1)
	Warrington	6	3.0 (1.8-4.7)
	Wigan	8	2.5 (1.6-3.6)
	Wirral	8	2.5 (1.6-3.7)

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
South East		515	5.8 (5.5-6.1)
	Bracknell Forest	6	5.2 (3.1-8.1)
	Brighton and Hove	15	5.2 (3.8-6.9)
	Buckinghamshire	47	8.6 (7.3-10.2)
	East Sussex	14	2.5 (1.8-3.3)
	Eastbourne	3	3.2 (1.5-5.9)
	Hastings	3	3.2 (1.5-6.1)
	Lewes	3	2.6 (1.1-5.1)
	Rother	1	1.0 (0.2-3.1)
	Wealden	4	2.3 (1.1-4.1)
	Hampshire	62	4.5 (3.9-5.2)
	Basingstoke and Deane	9	5.1 (3.4-7.4)
	East Hampshire	4	3.3 (1.7-5.8)
	Eastleigh	7	5.1 (3.1-7.8)
	Fareham	3	2.3 (1.0-4.5)
	Gosport	1	1.6 (0.4-4.0)
	Hart	2	1.7 (0.6-4.0)
	Havant	5	4.0 (2.2-6.6)
	New Forest	4	2.0 (1.0-3.6)
	Rushmoor	19	20.0 (15.1-25.9)
	Test Valley	5	4.3 (2.4-6.9)
	Winchester	4	3.2 (1.7-5.6)
	Isle of Wight	2	1.2 (0.4-2.8)
	Kent	88	5.6 (5.0-6.3)
	Ashford	7	5.2 (3.2-8.0)
	Canterbury	8	4.9 (3.1-7.2)
	Dartford	11	10.3 (7.1-14.4)
	Dover	5	4.6 (2.6-7.4)
	Folkestone and Hythe	7	6.2 (3.9-9.5)
	Gravesham	13	12.5 (8.9-17.1)
	Maidstone	18	10.6 (8.0-13.8)
	Sevenoaks	5	4.2 (2.3-6.9)
	Swale	6	4.3 (2.6-6.7)
	Thanet	3	2.1 (1.0-4.0)
	Tonbridge and Malling	2	1.5 (0.6-3.3)
	Tunbridge Wells	2	1.7 (0.6-3.7)
	Medway	19	6.7 (5.1-8.7)

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
South East <i>continued</i>	Oxfordshire	43	6.3 (5.2-7.4)
	Cherwell	11	7.2 (4.9-10.1)
	Oxford	23	15.2 (11.8-19.2)
	South Oxfordshire	3	2.1 (1.0-4.0)
	Vale of White Horse	3	2.5 (1.2-4.6)
	West Oxfordshire	3	2.4 (1.0-4.8)
	Portsmouth	12	5.7 (4.0-7.9)
	Reading	28	17.4 (13.9-21.5)
	Slough	43	29.1 (24.3-34.5)
	Southampton	29	11.5 (9.2-14.2)
	Surrey	50	4.2 (3.6-5.0)
	Elmbridge	4	3.2 (1.7-5.4)
	Epsom and Ewell	5	6.2 (3.5-10.3)
	Guildford	6	4.0 (2.4-6.4)
	Mole Valley	2	1.9 (0.6-4.5)
	Reigate and Banstead	6	4.1 (2.4-6.4)
	Runnymede	3	3.8 (1.8-7.0)
	Spelthorne	6	6.0 (3.6-9.5)
	Surrey Heath	4	4.9 (2.6-8.3)
	Tandridge	3	3.4 (1.6-6.5)
	Waverley	3	2.4 (1.1-4.5)
	Woking	8	7.6 (4.8-11.4)
	West Berkshire	6	4.0 (2.4-6.2)
	West Sussex	32	3.7 (3.0-4.6)
	Adur	3	4.2 (1.8-8.2)
	Arun	4	2.3 (1.1-4.1)
	Chichester	3	2.2 (1.0-4.4)
	Crawley	13	11.6 (8.2-15.8)
	Horsham	3	1.9 (0.8-3.7)
	Mid Sussex	3	2.0 (0.9-3.8)
	Worthing	4	3.9 (2.1-6.7)
	Windsor and Maidenhead	12	8.0 (5.6-11.0)
Wokingham	6	3.4 (2.0-5.4)	

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
East of England		394	6.1 (5.7-6.4)
	Bedford	15	8.5 (6.2-11.5)
	Cambridgeshire	44	6.8 (5.7-8.1)
	Cambridge	22	17.6 (13.6-22.4)
	East Cambridgeshire	3	3.4 (1.5-6.4)
	Fenland	5	4.6 (2.5-7.7)
	Huntingdonshire	7	4.1 (2.6-6.3)
	South Cambridgeshire	7	4.6 (2.9-7.0)
	Central Bedfordshire	6	2.1 (1.3-3.3)
	Essex	54	3.6 (3.1-4.2)
	Basildon	9	5.0 (3.3-7.3)
	Braintree	2	1.5 (0.6-3.2)
	Brentwood	2	3.0 (1.2-6.3)
	Castle Point	3	3.7 (1.8-6.8)
	Chelmsford	6	3.2 (1.9-5.1)
	Colchester	6	3.1 (1.8-4.9)
	Epping Forest	3	2.5 (1.2-4.7)
	Harlow	10	11.9 (8.1-16.9)
	Maldon	1	2.1 (0.6-5.3)
	Rochford	1	1.2 (0.2-3.4)
	Tendring	4	2.5 (1.3-4.5)
	Uttlesford	5	5.6 (3.1-9.2)
	Hertfordshire	74	6.2 (5.5-7.1)
	Broxbourne	5	5.5 (3.1-8.9)
	Dacorum	8	5.2 (3.3-7.7)
	East Hertfordshire	4	2.5 (1.2-4.4)
	Hertsmere	9	8.6 (5.7-12.5)
	North Hertfordshire	6	4.7 (2.9-7.4)
	St Albans	6	4.3 (2.6-6.7)
	Stevenage	6	7.2 (4.3-11.3)
	Three Rivers	7	7.9 (4.9-11.9)
	Watford	16	16.2 (11.9-21.6)
	Welwyn Hatfield	6	4.9 (2.9-7.7)
	Luton	51	24.0 (20.4-28.1)
	Milton Keynes	28	10.4 (8.3-12.9)

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
East of England	Norfolk	35	3.9 (3.2-4.7)
<i>continued</i>	Breckland	4	2.6 (1.3-4.7)
	Broadland	1	1.0 (0.3-2.6)
	Great Yarmouth	12	12.1 (8.5-16.7)
	King's Lynn and West Norfolk	8	5.1 (3.2-7.6)
	North Norfolk	1	1.0 (0.2-2.8)
	Norwich	8	5.9 (3.8-8.7)
	South Norfolk	1	1.0 (0.3-2.5)
	Peterborough	40	19.9 (16.5-23.8)
	Southend-on-Sea	13	7.1 (5.1-9.7)
	Suffolk	20	2.7 (2.0-3.4)
	Babergh	1	1.1 (0.2-3.2)
	East Suffolk	6	2.4 (1.4-3.8)
	Ipswich	7	5.3 (3.3-8.1)
	Mid Suffolk	0	0.3 (0.0-1.8)
	West Suffolk	6	3.2 (1.8-5.1)
	Thurrock	13	7.7 (5.5-10.5)
Yorkshire and the Humber		351	6.4 (6.0-6.8)
	Barnsley	5	2.2 (1.3-3.6)
	Bradford	77	15.9 (14.0-18.0)
	Calderdale	11	6.2 (4.4-8.5)
	Doncaster	16	4.4 (3.2-6.0)
	East Riding of Yorkshire	8	2.3 (1.4-3.4)
	Kingston upon Hull, City of	18	6.0 (4.4-8.0)
	Kirklees	48	13.3 (11.4-15.4)
	Leeds	65	8.7 (7.5-9.9)
	North East Lincolnshire	4	2.7 (1.4-4.6)
	North Lincolnshire	8	3.5 (2.1-5.5)
	North Yorkshire	10	1.7 (1.1-2.4)
	Craven	1	1.8 (0.4-5.1)
	Hambleton	2	1.8 (0.6-4.3)
	Harrogate	2	1.2 (0.5-2.7)
	Richmondshire	2	4.4 (1.8-9.0)
	Ryedale	0	0.6 (0.0-3.4)
	Scarborough	2	1.8 (0.7-4.0)
	Selby	1	1.1 (0.2-3.3)
	Rotherham	15	5.7 (4.1-7.6)
	Sheffield	46	8.0 (6.7-9.4)
	Wakefield	14	4.1 (2.9-5.5)
	York	5	2.2 (1.2-3.7)

PHE Centre^a	Upper tier local authority and local authority district^b	Average annual number of people^c	Average annual rate per 100,000 (95% CI^d)
East Midlands		348	7.3 (6.8-7.7)
	Derby	29	11.4 (9.1-14.1)
	Derbyshire	9	1.1 (0.7-1.6)
	Amber Valley	0	0.3 (0.0-1.5)
	Bolsover	1	1.3 (0.3-3.7)
	Chesterfield	4	3.5 (1.7-6.3)
	Derbyshire Dales	0	0.5 (0.0-2.6)
	Erewash	2	1.7 (0.6-3.8)
	High Peak	1	0.7 (0.1-2.6)
	North East Derbyshire	0	0.3 (0.0-1.8)
	South Derbyshire	1	0.6 (0.1-2.3)
	Leicester	141	39.7 (36.0-43.7)
	Leicestershire	31	4.4 (3.6-5.4)
	Blaby	6	6.3 (3.8-9.9)
	Charnwood	14	7.5 (5.4-10.1)
	Harborough	2	2.5 (1.0-5.2)
	Hinckley and Bosworth	2	1.5 (0.5-3.5)
	Melton	1	2.6 (0.7-6.7)
	North West Leicestershire	2	2.3 (0.9-4.7)
	Oadby and Wigston	3	5.8 (2.8-10.7)
	Lincolnshire	25	3.3 (2.6-4.1)
	Boston	8	12.0 (7.8-17.7)
	East Lindsey	4	2.8 (1.5-5.0)
	Lincoln	4	4.0 (2.1-7.1)
	North Kesteven	2	1.7 (0.6-3.8)
	South Holland	2	2.1 (0.8-4.6)
	South Kesteven	3	2.1 (1.0-4.0)
	West Lindsey	2	1.8 (0.6-4.1)
	Northamptonshire	50	6.6 (5.6-7.8)
	Corby	4	5.6 (2.9-9.9)
	Daventry	3	4.0 (1.9-7.3)
	East Northamptonshire	2	1.8 (0.6-4.1)
	Kettering	8	7.6 (4.8-11.4)
	Northampton	26	11.4 (9.0-14.2)
	South Northamptonshire	2	2.5 (1.0-5.2)
	Wellingborough	5	6.3 (3.5-10.4)

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
East Midlands <i>continued</i>	Nottingham	41	12.5 (10.4-14.9)
	Nottinghamshire	21	2.6 (2.0-3.3)
	Ashfield	4	2.9 (1.4-5.2)
	Bassetlaw	1	0.9 (0.2-2.5)
	Broxtowe	2	2.1 (0.8-4.2)
	Gedling	3	2.8 (1.4-5.2)
	Mansfield	3	2.8 (1.3-5.2)
	Newark and Sherwood	3	2.7 (1.3-5.0)
	Rushcliffe	5	4.0 (2.2-6.7)
	Rutland	1	2.5 (0.5-7.4)
South West		219	3.9 (3.6-4.2)
	Bath and North East Somerset	5	2.8 (1.6-4.5)
	Bournemouth, Christchurch and Poole	19	4.7 (3.6-6.1)
	Bristol, City of	53	11.5 (9.8-13.4)
	Cornwall	13	2.3 (1.6-3.1)
	Devon	21	2.6 (2.0-3.3)
	East Devon	4	2.5 (1.3-4.5)
	Exeter	6	4.6 (2.7-7.3)
	Mid Devon	3	4.1 (2.0-7.5)
	North Devon	1	1.4 (0.4-3.5)
	South Hams	1	1.2 (0.2-3.4)
	Teignbridge	4	3.0 (1.6-5.3)
	Torridge	1	1.0 (0.1-3.5)
	West Devon	1	1.2 (0.1-4.3)
	Dorset	8	2.0 (1.3-3.1)
	Gloucestershire	22	3.5 (2.7-4.4)
	Cheltenham	4	3.7 (2.0-6.3)
	Cotswold	2	1.9 (0.6-4.4)
	Forest of Dean	1	1.5 (0.4-3.9)
	Gloucester	6	4.6 (2.8-7.3)
	Stroud	4	3.4 (1.7-5.9)
	Tewkesbury	5	5.0 (2.8-8.5)
	Isles of Scilly	0	0.0 (0.0-0.0)
	North Somerset	6	2.8 (1.7-4.4)
	Plymouth	14	5.5 (3.9-7.3)
	Somerset	11	2.0 (1.4-2.8)
	Mendip	2	1.5 (0.5-3.4)
	Sedgemoor	3	2.4 (1.1-4.6)
	Somerset West and Taunton	4	2.4 (1.2-4.3)
	South Somerset	3	1.6 (0.7-3.1)
	South Gloucestershire	13	4.5 (3.2-6.2)
	Swindon	21	9.6 (7.4-12.3)
	Torbay	3	2.5 (1.2-4.5)
	Wiltshire	10	1.9 (1.3-2.8)

PHE Centre ^a	Upper tier local authority and local authority district ^b	Average annual number of people ^c	Average annual rate per 100,000 (95% CI ^d)
North East		103	3.9 (3.4-4.3)
	County Durham	11	2.0 (1.4-2.9)
	Darlington	3	3.1 (1.5-5.8)
	Gateshead	8	4.0 (2.5-5.9)
	Hartlepool	2	2.5 (1.0-5.2)
	Middlesbrough	15	10.7 (7.8-14.3)
	Newcastle upon Tyne	30	9.9 (8.0-12.2)
	North Tyneside	6	2.9 (1.7-4.6)
	Northumberland	4	1.2 (0.6-2.2)
	Redcar and Cleveland	2	1.7 (0.7-3.5)
	South Tyneside	4	2.7 (1.4-4.6)
	Stockton-on-Tees	7	3.6 (2.2-5.4)
	Sunderland	10	3.7 (2.5-5.3)

^a Ordered by decreasing total number of cases in 2019

^b Those highlighted in bold are upper tier local authority districts only, those indented are local authority district only, and those neither highlighted nor indented are both an upper tier local authority and a local authority district

^c Average number of cases in a local authority district may not be the same as the sum of the average number of cases in the corresponding upper tier local authority due to rounding

^d CI - confidence interval

Table 5: Number and proportion of culture confirmed TB cases and pulmonary TB cases by country, UK, 2010-2019

Year	England				Scotland ^a				Wales				Northern Ireland ^a				UK			
	Culture confirmed TB cases		Culture confirmed pulmonary TB cases		Culture confirmed TB cases		Culture confirmed pulmonary TB cases		Culture confirmed TB cases		Culture confirmed pulmonary TB cases		Culture confirmed TB cases		Culture confirmed pulmonary TB cases		Culture confirmed TB cases		Culture confirmed pulmonary TB cases	
	n	%	N	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
2010	4,622	60.2	2,904	70.7	325	64.6	228	70.2	107	70.4	72	76.6	54	81.8	35	94.6	5,108	60.8	3,239	71.0
2011	5,049	61.0	3,139	72.0	295	66.0	195	68.9	94	71.8	57	79.2	47	77.0	38	80.9	5,485	61.5	3,429	72.0
2012	4,900	60.6	3,012	70.6	276	68.1	165	75.0	105	77.2	63	79.7	53	60.9	36	76.6	5,334	61.2	3,276	71.0
2013	4,398	60.5	2,772	73.4	241	61.8	156	71.9	87	61.3	65	74.7	45	61.6	29	69.0	4,771	60.6	3,022	73.3
2014	3,934	60.8	2,521	73.2	236	67.8	162	70.7	81	71.1	55	85.9	64	67.4	47	70.1	4,315	61.4	2,785	73.2
2015	3,508	61.2	2,296	74.4	209	66.1	130	78.3	80	69.0	61	91.0	39	63.9	33	82.5	3,836	61.6	2,520	75.0
2016	3,588	63.9	2,373	77.0	210	68.4	130	72.2	81	77.1	66	86.8	56	65.1	39	78.0	3,935	64.3	2,608	77.0
2017	3,173	62.6	2,131	75.8	198	68.0	133	77.8	75	72.1	52	85.2	47	67.1	34	70.8	3,493	63.2	2,350	76.0
2018	2,866	62.1	1,985	75.4	184	67.6	132	77.6	77	80.2	66	88.0	35	66.0	27	69.2	3,162	62.8	2,210	75.8
2019	2,882	61.0	1,959	74.2	160	67.8	116	77.3	79	79.0	60	82.2	55	77.5	44	86.3	3,176	61.9	2,179	74.8

^a Data for Scotland and Northern Ireland is provisional and subject to further validation

Over the last ten years, the proportion of TB cases that were culture confirmed in the UK has remained relatively stable at around 61.0%, with some annual fluctuations. Wales generally had the greatest proportion of culture confirmed TB cases, which increased from 70.4% to 79.0% between 2010 and 2019, respectively. In Northern Ireland, the proportion has remained relatively high in recent years, increasing from 66.0% in 2018 to 77.5% in 2019. The proportion for Scotland (2019: 67.8%) and England (2019: 61.0%) has remained relatively consistent throughout the ten-year period. Overall, culture confirmation was higher in pulmonary TB cases, with almost three-quarters of these being culture confirmed in the UK during 2019 (74.8%).

Table 6: Number and proportion of TB cases^a with drug resistance by country, UK, 2000-2019

Year	England				Scotland ^b				Wales				Northern Ireland ^b				UK							
	INH-R TB cases ^c		MDR/RR-TB cases		INH-R TB cases ^c		MDR/RR-TB cases		INH-R TB cases ^c		MDR/RR-TB cases		INH-R TB cases ^c		MDR/RR-TB cases		INH-R TB cases ^c		MDR/RR-TB cases		XDR-TB cases ^d		DR cohort ^e	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	N	
2000	150	5.4	41	1.5	11	3.8	0	0.0	2	1.9	0	0.0	0	0.0	0	0.0	163	5.1	41	1.3	1	0.03	41	
2001	187	5.9	33	1.0	7	2.8	2	0.8	2	2.6	3	3.8	0	0.0	1	2.7	196	5.6	39	1.1	0	0.00	44	
2002	239	6.3	45	1.2	9	3.5	1	0.4	6	7.5	1	1.3	2	5.6	0	0.0	256	6.1	47	1.1	0	0.00	50	
2003	232	6.1	68	1.8	8	3.0	1	0.4	6	5.5	3	2.8	1	3.2	0	0.0	247	5.8	72	1.7	1	0.02	74	
2004	249	6.2	61	1.5	14	4.6	1	0.3	5	5.0	2	2.0	1	1.6	1	1.6	269	6.0	65	1.4	0	0.00	72	
2005	281	6.2	56	1.2	11	4.1	0	0.0	1	0.8	2	1.7	0	0.0	1	2.2	293	5.9	59	1.2	0	0.00	62	
2006	284	6.1	74	1.6	12	4.2	2	0.7	5	3.9	1	0.8	1	2.2	2	4.4	302	5.9	79	1.6	0	0.00	86	
2007	254	5.8	63	1.4	8	2.8	5	1.7	10	7.9	4	3.2	2	3.5	3	5.3	274	5.6	75	1.5	0	0.00	83	
2008	217	4.8	68	1.5	12	3.8	3	1.0	3	3.0	3	3.0	2	3.9	1	2.0	234	4.7	75	1.5	2	0.04	85	
2009	268	5.8	70	1.5	18	5.6	2	0.6	6	5.1	1	0.8	0	0.0	0	0.0	292	5.7	73	1.4	2	0.04	80	
2010	228	5.0	75	1.7	15	4.6	1	0.3	6	5.6	0	0.0	2	3.9	1	2.0	251	5.0	77	1.5	3	0.06	81	
2011	295	5.9	89	1.8	18	6.1	2	0.7	1	1.1	2	2.1	1	2.3	2	4.5	315	5.8	95	1.8	6	0.11	101	
2012	255	5.3	86	1.8	13	4.7	2	0.7	9	8.7	1	1.0	3	5.7	0	0.0	280	5.3	89	1.7	2	0.04	97	
2013	232	5.4	78	1.8	11	4.7	5	2.1	6	6.9	2	2.3	6	13.3	0	0.0	255	5.5	85	1.8	3	0.06	93	
2014	215	5.5	58	1.5	17	7.2	2	0.9	7	8.6	3	3.7	3	4.7	1	1.6	242	5.6	64	1.5	3	0.07	80	
2015	192	5.5	54	1.5	9	4.3	2	1.0	6	7.5	1	1.3	3	7.7	0	0.0	210	5.5	57	1.5	10	0.26	70	
2016	191	5.4	61	1.7	7	3.3	1	0.5	2	2.5	2	2.5	2	3.6	3	5.4	202	5.2	67	1.7	7	0.18	77	
2017	181	5.8	56	1.8	12	6.1	3	1.5	7	9.6	3	4.1	1	2.1	0	0.0	201	5.8	62	1.8	3	0.09	71	
2018	187	6.6	46	1.6	13	7.1	3	1.6	3	4.1	2	2.7	3	8.6	0	0.0	206	6.6	51	1.6	5	0.16	55	
2019	184	6.4	52	1.8	8	5.0	0	0.0	2	2.8	0	0.0	4	7.3	1	1.8	198	6.3	53	1.7	3	0.10	53	

^a Culture confirmed TB cases with results for at least isoniazid and rifampicin. For all countries results are from phenotypic DSTs, with some cases in England having WGS resistance predictions

^b Data for Scotland and Northern Ireland is provisional and subject to further validation

^c Cases who are resistant to isoniazid without MDR-TB

^d One of the XDR-TB cases was notified in Northern Ireland in 2010, all others were notified in England

^e The drug-resistant (DR) cohort includes cases with confirmed initial or acquired MDR/RR-TB, as well as those treated with a second line regimen for MDR/RR-TB (without phenotypic DST results or WGS resistance predictions)

Overall, the proportion of culture confirmed TB cases with isoniazid resistance without MDR-TB in the UK has slightly increased (2000: 5.1%, 2019: 6.3%), as has the proportion of cases with MDR/RR-TB since 2000 (2000:1.3%, 2019: 1.7%). In 2019, all but one of 53 MDR/RR-TB cases in the UK were from England. Three confirmed cases of XDR-TB were notified in the UK in 2019, all of which were in England.

Table 7: TB outcome at 12 months for drug-sensitive TB cases with expected treatment duration of <12 months^a by country, UK, 2018

Country	Completed		Died		Lost to follow-up		Still on treatment		Stopped		Not evaluated ^b		Total
	n	%	n	%	n	%	n	%	n	%	n	%	n
England	3,462	83.6	181	4.4	175	4.2	197	4.8	43	1.0	82	2.0	4,140
Scotland ^c	132	53.4	23	9.3	5	2.0	9	3.6	0	0.0	78	31.6	247
Wales	72	84.7	6	7.1	1	1.2	3	3.5	1	1.2	2	2.4	85
Northern Ireland ^c	32	66.7	2	4.2	5	10.4	1	2.1	1	2.1	7	14.6	48
UK	3,698	81.8	212	4.7	186	4.1	210	4.6	45	1.0	169	3.7	4,520

^a Excludes initial and acquired resistance to rifampicin and MDR-TB cases and those treated with an MDR-TB regimen. Also excludes those with CNS, spinal, miliary or cryptic disseminated TB

^b Not evaluated includes unknown and transferred out

^c Data for Scotland and Northern Ireland is provisional and subject to further validation

For drug-sensitive TB cases notified in 2018, with an expected treatment duration of less than 12 months, treatment completion at 12 months varied by country but the highest proportion was in Wales (84.7%). It should be noted that a high proportion of cases in Scotland and Northern Ireland did not have a reported outcome ('not evaluated' in Table 7) and likely accounts for the low proportion of cases reported as having completed treatment. Overall, 4.7% of TB cases died in the UK, and 4.1% were lost to follow up. The highest number of deaths was in England (181) although the greatest proportion of deaths was recorded in Scotland (9.3%).

Table 8: Treatment completion at 12 months for drug-sensitive TB cases with expected treatment duration of <12 months^a by country, UK, 2009-2018

Country	2009		2010		2011		2012		2013		2014		2015		2016		2017		2018	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
England	5,918	81.9	5,649	82.9	6,024	82.1	6,015	83.8	5,504	85.7	4,848	84.9	4,205	84.0	4,226	85.1	3,816	85.3	3,462	83.6
Scotland ^b	318	69.9	362	77.0	322	75.9	303	79.3	287	81.5	258	80.4	225	80.6	212	74.9	218	80.4	132	53.4
Wales	148	77.5	107	77.5	90	76.3	90	75.0	101	83.5	76	82.6	87	86.1	78	83.0	67	70.5	72	84.7
Northern Ireland ^b	41	75.9	39	67.2	42	79.2	55	70.5	43	74.1	74	85.1	42	87.5	60	78.9	54	85.7	32	66.7
UK	6,425	81.1	6,157	82.3	6,478	81.7	6,463	83.3	5,935	85.3	5,256	84.7	4,559	83.9	4,576	84.4	4,155	84.7	3,698	81.8

^a Excludes initial and acquired resistance to rifampicin and MDR-TB cases and those treated with an MDR-TB regimen. Also excludes those with CNS, spinal, miliary or cryptic disseminated TB

^b Data for Scotland and Northern Ireland is provisional and subject to further validation

In the UK, the proportion of drug-sensitive TB cases, with an expected treatment duration of less than 12 months, who completed treatment by 12 months improved between 2009 and 2013, with some annual fluctuations. Since 2013 (85.3%), there has been a slight decline in this proportion (2018: 81.8%). Due to small numbers of cases in Northern Ireland, Scotland and Wales, there are larger annual fluctuations in the proportion of cases completing treatment. It should be noted that in 2018 the low proportions of cases completing treatment may be due to missing outcomes (see explanation in text below Table 7).

Table 9: Last recorded TB outcome for the entire drug-sensitive TB cohort^a by country, UK, 2018

Country	Completed		Died		Lost to follow-up		Still on treatment		Stopped		Not evaluated ^b		Total n
	n	%	n	%	n	%	n	%	n	%	n	%	
England	3,863	84.6	231	5.1	192	4.2	118	2.6	48	1.1	112	2.5	4,565
Scotland ^c	148	55.0	24	8.9	5	1.9	7	2.6	0	0.0	85	31.6	269
Wales	80	85.1	9	9.6	1	1.1	1	1.1	1	1.1	2	2.1	94
Northern Ireland ^c	35	66.0	3	5.7	5	9.4	2	3.8	1	1.9	7	13.2	53
UK	4,126	82.8	267	5.4	203	4.1	128	2.6	50	1.0	206	4.1	4,981

^a Excludes initial and acquired resistance to rifampicin and MDR-TB cases and those treated with an MDR-TB regimen

^b Not evaluated includes unknown and transferred out

^c Data for Scotland and Northern Ireland is provisional and subject to further validation

Almost 83.0% of drug-sensitive TB cases notified in the UK in 2018 completed treatment at their last recorded outcome, with 2.6% reported as still being on treatment. Overall, 267 (5.4%) cases had died, and 203 (4.1%) cases were lost to follow-up.