Animal & Plant Health Agency

Bovine tuberculosis in England in 2025

Epidemiological analysis of the 2025 surveillance data and historical trends in cattle

November 2026

OGL

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1.0 Executive summary

Bovine tuberculosis (TB) is a chronic infectious disease caused by the bacterium Mycobacterium bovis (M. bovis). In England, it is subject to a statutory eradication programme based on the government's strategy published in April 2014 and then independently reviewed in 2018 and 2025, which aims to achieve officially TB free (OTF) status for the whole country by 2038. As part of this strategy, England is divided into 3 bovine TB "risk areas" as determined by the level of disease in cattle and the presence of a reservoir of M. bovis infection in wildlife.

New TB incidents

In 2025, the number of new TB incidents recorded across England decreased by 14% compared to 2024. The High Risk Area (HRA), spanning the west and south-west, accounted for 76% of those incidents (Table 1.1). New TB incident numbers in the HRA also fell by 14% compared to 2024. The Edge Area, which lies between the HRA and Low Risk Area (LRA) and is split into annual and 6-monthly testing areas, accounted for 19% of all the new TB incidents in 2025, 62% of which were observed in the 6-monthly testing portion. New TB incident numbers in the Edge Area fell by 12% compared to 2024. As in previous years, the Low Risk Area (LRA) spanning the north, east and south-east of England had very few TB incidents in 2025, representing 5% of all the new TB incidents occurring in England.

TB herd incidence rate

Trends in the TB herd incidence rate (number of new TB incidents per 100 herd years at risk (HYR)) are discussed in detail in Chapter 3.4. In 2025 this incidence rate was lower than in 2024 (Table 1.1).

Herd prevalence of TB

Average monthly TB prevalence in England overall and in each of the 3 risk areas decreased in 2025 compared to 2024 (Table 1.1).

Endemic area of TB

Between 2024 and 2025, there was a net retraction of 929.06 km^2 in the total size of the area considered to harbour endemic M. bovis infection in England (Figure 6.1.1). Although the HRA and parts of the Edge Area (particularly along the HRA border) continued to be a stable endemic area, there were also portions of both areas that experienced a considerable retraction.

Recurrent and persistent TB incidents

Over half of new TB incidents occurring in 2025 in England, and 58.9% of those in the HRA and 46.4% in the Edge Area, were disclosed in herds that had previously experienced a TB incident in the preceding 3 years (recurrent herd incidents). Therefore, recurrent infection of cattle herds remains an important driver of the

epidemic in these risk areas (Table 1.1). In 2025, 87% of persistent incidents ongoing at the end of the year in England were in the HRA.

Risk factors for new TB incidents

In 2025, as in previous years, herds located in the HRA, herds with over 300 cattle (which are more common in the HRA than elsewhere) and herds that had a history of previous TB incidents, were at highest risk of experiencing a new TB incident. Dairy herds were associated with a higher herd TB incidence rate that could not be fully explained by their herd size, testing history or location.

Whole genome sequencing (WGS)

WGS data were available for 800 (85.7%) of the 933 OTF-W incidents in England in 2025 and were used, alongside epidemiological information, to support assessment of potential infection risk pathways and identify circulating M. bovis clades.

Source of TB infection in herds

Data-driven assessments and veterinary Disease Report Form (DRF) investigations of TB incidents highlighted the importance of local infection sources in the HRA and Edge Area, while also identifying cattle movements and residual infection as contributors to TB incidents across England. Local transmission pathways were most frequently identified in the HRA and Edge Area by data-driven assessments, while cattle movements accounted for a greater proportion of attributed incidents in the LRA. However, available evidence did not support attribution to a single infection pathway for a substantial proportion of incidents, particularly OTF-S.

Table 1.1 Key bovine TB epidemiological parameters for all new TB incidents (OTF-W and OTF-S) recorded in 2025, with selected 2024 values in parentheses.

	HRA	Edge Area	LRA	England
Number of new TB herd incidents detected (2024)	1,622 (1,897)	405 (459)	103 (123)	2,130 (2,479)
Number of new OTF-W incidents (2024)	705 (812)	189 (221)	39 (37)	933 (1,070)
Number of TB incidents ongoing at the end of the year (2024)	1,048 (1,296)	237 (309)	49 (66)	1,334 (1,671)
Herd incidence rate per 100 herd-years at risk (2024)	12.0 (13.6)	6.8 (7.2)	0.9 (1.0)	6.9 (7.6)
End of year herd prevalence (%) (2024)	5.9 (7.2)	3.1 (4.0)	0.3 (0.4)	3.1 (3.8)

	HRA	Edge Area	LRA	England
Number of skin test reactors (2024)	10,124 (11,539)	2,262 (2,769)	325 (344)	12,711 (14,652)
Number of IFN-γ test reactors (2024)	5,396 (4,456)	1,212 (1,362)	373 (262)	6,981 (6,080)
Laboratory positive slaughterhouse incidents (2024)	999 (971)	281 (328)	51 (54)	1,331 (1,353)
Incident duration (in days)				
Median duration of restrictions for incidents that ended in 2025 (25^{th}, 75^{th} percentiles)	189 (161-262)	194 (160-264)	160 (112-232)	188 (160-263)
Median duration of restrictions for incidents that ended in 2024 (25^{th}, 75^{th} percentiles)	190 (161-272)	186 (159-260)	155 (97-202)	188 (160-266)
Percentage of incidents that ended in the year that were persistent (lasted more than 550 days) (2024)	5.2 (4.7)	5.9 (2.5)	3.4 (1.7)	5.2 (4.2)
Number of persistent incidents ongoing at the end of the year (2024)	78 (93)	9 (17)	3 (6)	90 (116)
Recurrence (%)				
Percentage of new TB incidents in the year that occurred in herds that experienced another TB incident in the preceding 36 months of the disclosing test (2024)	58.9 (60.3)	46.4 (47.5)	19.4 (21.1)	54.7 (56.0)

2.0 Preface

Bovine TB (TB) is a chronic infectious and contagious disease caused primarily by the bacterium Mycobacterium bovis (M. bovis). In England, it is subject to a statutory eradication programme based on the government's strategy, published in April 2014, independently reviewed in 2018, and updated in 2025 (Bovine TB strategy review update), which aims to achieve officially TB free (OTF) status for the whole country by 2038. Officially TB Free country (or regional) status is achieved when infection with *M. tuberculosis* complex has not been present in at least 99.8% of herds, representing at least 99.9% of the bovids in the country or region, for 3 consecutive years, as defined in the WOAH Terrestrial Animal Health Code, Article 8.12.4.

As part of the eradication strategy, England is divided into 3 bovine TB "risk areas" as determined by the level and epidemiology of the disease: the High Risk Area (HRA), Edge Area, and Low Risk Area (LRA) (Figure 2.1).

Eradication of bovine TB in England requires control of infection in both cattle and the main wildlife reservoir, the European badger (Meles meles). In cattle, this includes:

- Systematic active surveillance through both routine and targeted tuberculin skin testing of herds. The default frequency of routine skin testing varies across England according to the risk area (Figure 2.1).
- Mandatory tuberculin skin testing of cattle moved between herds (pre- and post- movement TB testing).
- Routine (passive) slaughterhouse surveillance for suspicious lesions of TB in the carcases of cattle commercially slaughtered for human consumption.
- Additional measures aiming to reduce the risk of disease occurrence and persistence and enable herds to regain OTF status, including movement restrictions and more frequent and sensitive testing of TB incident herds.

The HRA extends from the western areas of the Midlands to the south and west of England (excluding the Isles of Scilly). From July 2021, default 6-monthly herd testing was rolled out across the HRA, having been first introduced in Staffordshire and Shropshire in 2020, replacing the annual testing regime.

The Edge Area was established in 2013 to form a buffer zone separating the HRA and LRA. East Sussex is the only county of the Edge Area that is surrounded by the LRA. In 2018 the boundaries of the HRA and Edge Area were redrawn, with some counties previously split between the 2 areas becoming fully incorporated into the Edge Area. Additionally, a portion of the redefined Edge Area, including parts previously included in the HRA, was put on 6-monthly TB surveillance testing, except those herds that could meet specific criteria under the Earned Recognition Scheme. Herds under this scheme, along with the remainder of herds in the Edge Area, are subject to annual TB surveillance testing. Figures within this report show the data for the Edge Area overall, although specific details on trends within the 6-monthly and annual surveillance testing parts of the Edge Area are described and compared within the text.

The LRA was also established in 2013 and extends to the north and east of the Edge Area, excluding East Sussex, but including the Isles of Scilly. Most cattle herds in the LRA are routinely tested for TB every 4 years, unless they are within a TB Hotspot, a radial surveillance zone, or have been identified as requiring annual testing for specific public health or TB risk reasons.

A TB Hotspot (HS) is an area in the LRA of England established by APHA where enhanced TB control measures are carried out following detection of lesion- or culture-positive (OTF-W) herd incidents of uncertain origin. Enhanced measures include, but are not limited to, more frequent cattle surveillance testing and a survey of TB in ‘found dead’ wildlife (badgers and deer). Although set up in the LRA, some hotspots can extend into the adjoining counties of the Edge Area. Hotspots are categorised into 5 management stages depending, among other things, on their epidemiological findings and the results of enhanced TB surveillance. Further

information on TB hotspots can be found here - April 2025: TB hotspots in the Low Risk Area of England[1].

2.1 Purpose

The primary purpose of this report is to provide data on the frequency and distribution of bovine TB in cattle in England. Where possible, it also provides an interpretation of the trends in epidemiological measures to support effective disease management and policy decisions.

2.2 Intended Audience

The intended primary audience is policy makers and advisors, who require technical scientific detail to underpin their decision making, as well as official veterinarians delivering the bovine TB eradication programme in England. For this reason, a degree of prior understanding of technical terminology is assumed. A glossary of terms and abbreviations can be found in the explanatory supplement for the annual reports 2025. The data, scientific approach and interpretation may also be of value to those in the scientific community who work in the field of bovine TB epidemiology. The report findings may also be of interest to the wider farming and private veterinarian community who are affected by bovine TB and the disease control measures.

[1] https://www.gov.uk/government/publications/bovine-tb-hotspots-in-the-low-risk-area-of-england/april-2025-tb-hotspots-in-the-low-risk-area-of-england

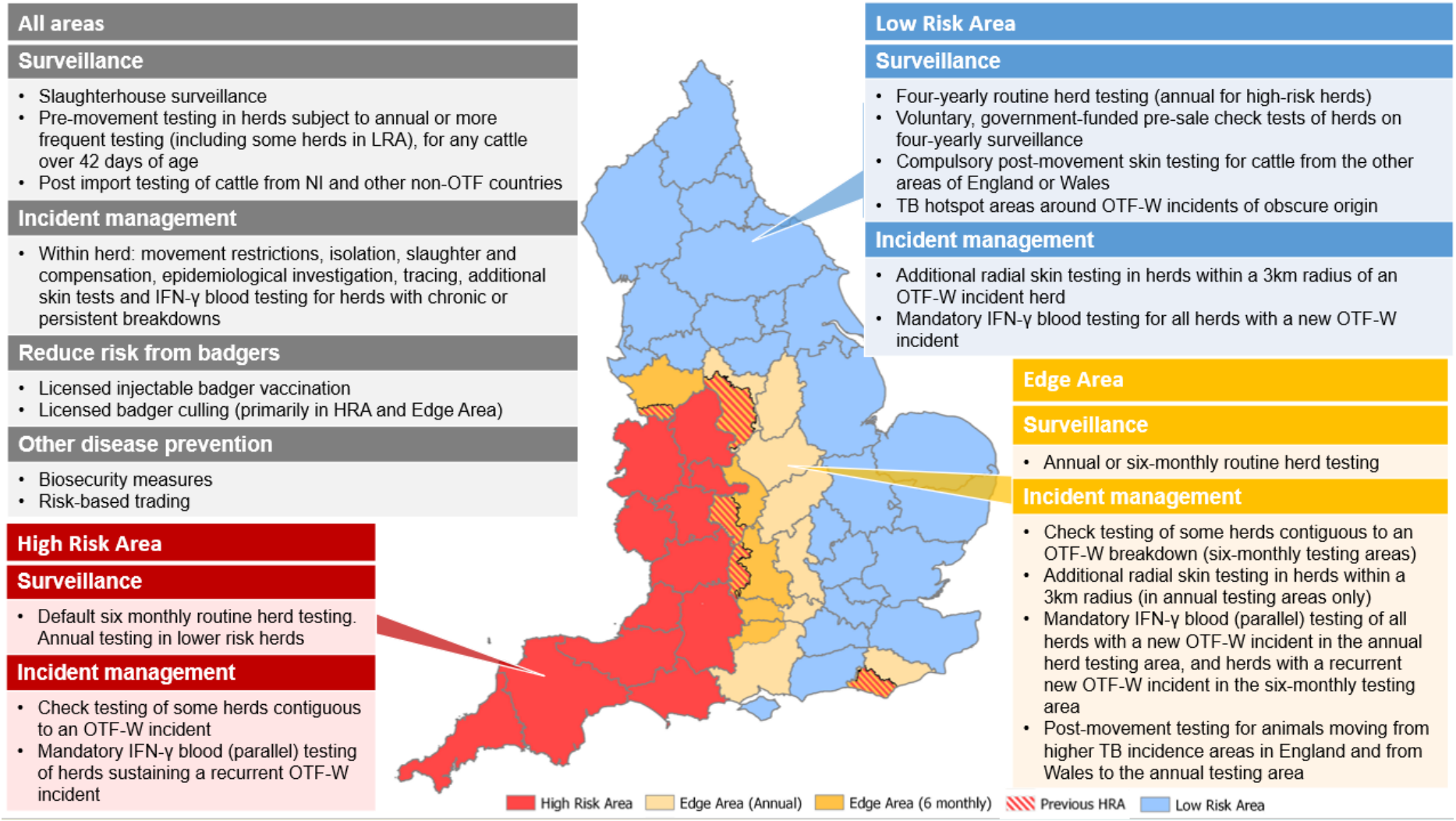


Figure 2.1 TB surveillance, incident management and disease prevention strategies effective during 2025 by risk area in England.

Figure 2.1 description:

Several TB disease prevention strategies were in place in 2025 across England as a whole, including slaughterhouse surveillance and pre-movement testing in herds subject to annual or more frequent testing for any cattle over 42 days of age. During a TB incident, disease prevention measures include herd movement restrictions, isolation and slaughter of test-positive animals (with compensation payments to keepers, epidemiological investigation, tracing and additional skin and IFN-γ blood testing for herds with chronic (more than 100 days) or persistent (more than 550 days) incidents. Herds are also subject to mandatory IFN-γ blood testing (in parallel) if they sustain a recurrent OTF-W incident in the HRA or 6-monthly testing Edge Area, or any herds experiencing a new OTF-W incident in the LRA or annual testing Edge Area. To reduce the risk from badgers, badger vaccination and licenced badger culling also took place, with badger culling being phased out under Government policy. Other disease prevention strategies include promotion of herd biosecurity measures (for example through government-funded TB Advisory Services visits to farms) and risk-based trading. Incident management in the HRA and 6-monthly Edge Area also includes check testing of herds contiguous to an OTF-W incident. Additional incident management practices in the Edge Area include post-movement testing for animals moving from higher TB incidence areas in England, and from Wales to the annual testing area. In the LRA and annual testing Edge Area, radial testing of herds is also carried out within a 3km radius of another OTF-W incident. Information on routine surveillance testing in the 3 risk areas can be found in Chapter 2.0.

2.3 Data sources and processing

Data on herds, animals, bovine TB incidents and tests applied to cattle in England were downloaded from the APHA SAM and RADAR databases on 11 February 2026. References to ‘cattle’ include domestic cattle (Bos taurus), farmed water buffalo (Bubalus bubalis) and farmed bison (Bison spp.).

Approximately 22,000 individual animal-level skin test records for England in 2025 were unavailable from the source data at the time of analysis, representing less than 0.5% of the recorded volume of individual testing. The missing records were distributed across all three TB risk areas and across several test types, principally whole-herd, short-interval, movement-related and radial testing. The available information indicates that the missing records predominantly relate to clear test results. Their absence may therefore result in small underestimates of the numbers of animals tested in some testing categories and correspondingly slight overestimates of derived reactor rates. Given the scale and distribution of the missing records, they were considered unlikely to materially affect the epidemiological trends or conclusions presented in this report. These records will be incorporated into the analysis for next year’s report and may result in small adjustments to the 2025 testing figures and derived rates described above.

Considerable effort was made to correct data inconsistencies. However, there may be small differences between the data presented in this report and the accredited official statistics on TB in cattle that are published on a quarterly basis (National TB Statistics).

Further information on data sources and processing can be found in the explanatory supplement for the annual reports 2025.

Approved finishing units (AFUs) with and without grazing are biosecure holdings set up under licence from APHA to provide a route for rearing, fattening or finishing negative-testing cattle from TB-restricted or unrestricted (OTF) herds. Licenced finishing units (LFUs) are another type of biosecure holding approved by the APHA to provide a route for finishing of negative-testing cattle from OTF herds. In 2025 there were 322 active AFUs, and 55 active LFUs in England. Both AFUs and LFUs have been excluded from the figures and statistical parameters presented in this report due to the limited epidemiological impact of any TB detections in such units.

2.4 Other bovine tuberculosis epidemiology reports

This annual report for England is part of a suite of regular reports produced by APHA to provide surveillance information and epidemiological analysis of TB in cattle in Great Britain (GB). Other publicly available reports in the series are:

1. Bovine tuberculosis in Great Britain: annual surveillance data and historical trends (referred to hereafter as the 'GB TB data report'). This report is published as an ODS file and provides supporting material in the form of detailed data tables and additional graphics. It presents data separately for England, Scotland and Wales.
2. Year End Descriptive Epidemiology Reports for counties/ areas in the LRA and selected focus counties in the Edge Area of England. These reports provide a detailed epidemiological assessment of TB at a local level.
3. Bovine tuberculosis in Great Britain: Explanatory Supplement to the annual reports. This document provides in-depth explanations about data handling methodologies, terminology, surveillance approaches, and control measures used in GB. It also describes relevant policy changes over time in England and Great Britain and provides a glossary of terms.
4. Analysis of bovine tuberculosis surveillance at routine slaughter of cattle in Great Britain, 2019 to 2022. This triannual report explores the role of slaughterhouse surveillance in the detection of TB cases in GB.

3.0 Headline epidemiological parameters

3.1 Herd demographics

At the end of 2025, there were 4,707,699 cattle kept in 43,396 active cattle herds in England, of which 33,825 were beef herds (78%) and 8,115 (19%) were dairy. The remaining 3% were other herd types. Most registered, active cattle herds in 2025 were in the HRA and LRA (41% of all herds in each risk area), with the remaining 18% registered in the Edge Area, the same distribution as 2024.

Table 3.1.1 Number of active cattle herds in England, by bovine TB risk area, during 2024 and 2025. Active cattle herds are those registered on the APHA Sam database on 31/12/2025 for 2025 and 31/12/2024 for 2024.

	HRA	Edge Area	LRA	England
Number of active cattle herds in 2025	**17,780**	**7,721**	**17,895**	**43,396**
Number of active cattle herds in 2024	18,103	7,829	18,322	44,254
Percentage change in number of active cattle herds from 2024 to 2025	**-1.78%**	**-1.38%**	**-2.33%**	**-1.94%**
Number of beef herds in 2025	**13,182**	**6,087**	**14,556**	**33,825**
(Percentage of total for risk area)	**(74%)**	**(79%)**	**(81%)**	**(78%)**
Number of beef herds in 2024	13,483	6,201	15,016	34,700
(Percentage of total for risk area)	(74%)	(79%)	(82%)	(78%)
Number of dairy herds in 2025	**3,972**	**1,397**	**2,746**	**8,115**
(Percentage of total for risk area)	**(22%)**	**(18%)**	**(16%)**	**(19%)**
Number of dairy herds in 2024	4,018	1,398	2,745	8,161
(Percentage of total for risk area)	(22%)	(18%)	(15%)	(18%)
Number of other herds in 2025	**626**	**237**	**593**	**1,456**
(Percentage of total for risk area)	**(4%)**	**(3%)**	**(3%)**	**(3%)**
Number of other herds in 2024	602	230	561	1,393
(Percentage of total for risk area)	3	3	3	(3%)
Median herd size in 2025 - beef	**46**	**39**	**43**	**43**
Median herd size in 2024 - beef	47	40	43	44
Median herd size in 2025 - dairy	**238**	**228**	**208**	**227**
Median herd size in 2024 - dairy	239	239	214	231
Median herd size in 2025 - other	**39**	**22**	**23**	**28**
Median herd size in 2024 - other	33	20	22	25

The distribution of herds, by size and production type, within each bovine TB risk area of England has remained similar over recent years. In 2025, the HRA had proportionally more herds with over 300 cattle (12%) compared to the Edge Area (10%) and LRA (9%) (Figure 3.1.1). Most herds in all risk areas were relatively small,

with fewer than 50 cattle (49% in the HRA, 54% in the Edge Area and 55% in the LRA).

Herds with between 1 to 200 cattle were mainly beef herds (71%). Of those holdings with between 201 to 300 cattle, 56% were beef herds. Dairy herds made up the majority of holdings with over 300 cattle (67%), with the same trend observed across risk area (73% in the HRA, 69% in the Edge Area and 58% in the LRA).

As herd size decreased, the proportion of beef herds increased. ‘Other’ herds tended to be small, with 80% holding between 1 and 50 cattle. This category includes a range of herd types not limited to mixed herds, dealers, specialist breeders and non-standard holdings. A description of these herds can be found in the explanatory supplement for the annual reports 2025.

The HRA had the largest proportion of dairy herds (22%) in comparison to the Edge Area (18%) and LRA (16%).

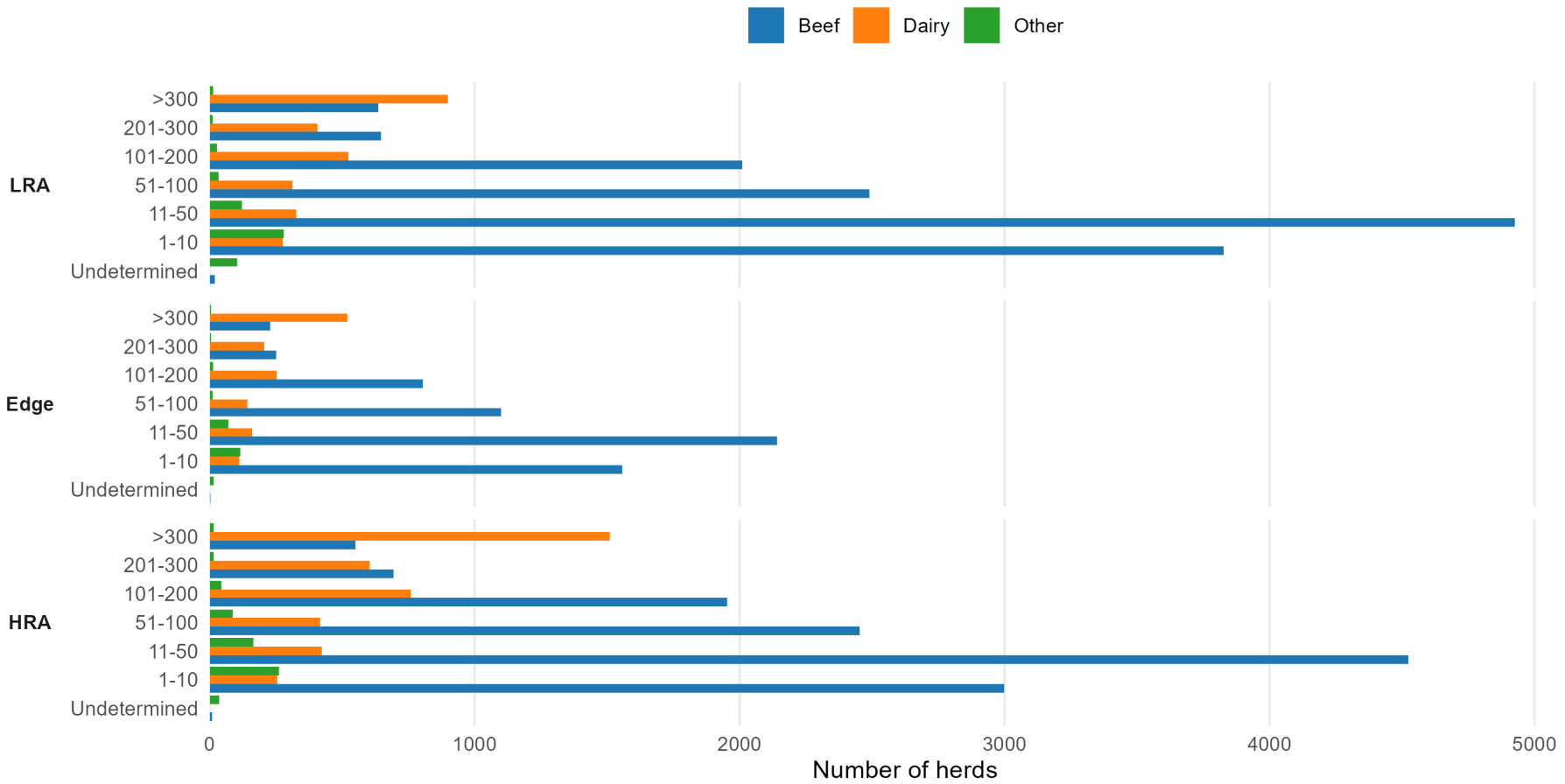


Figure 3.1.1 Number of herds by herd size and type in each risk area of England in 2025.

3.2 Number of new TB incidents

The number of Officially Tuberculosis Free (OTF) herds in which TB was detected in 2025 is referred to as the number of new TB incidents.

In 2025, the total number of new TB incidents detected in England, with OTF herd status suspended (OTF-S) or withdrawn (OTF-W), decreased by 14% compared to 2024 (2,130 versus 2,479) (Table 3.2.1). The highest number and proportion of new TB incidents in England occurred, as expected, in the HRA (76%). This was the same as in 2024. This was followed by the Edge Area (19% in both 2025 and 2024). The LRA had just 5% of all new TB incidents in England, the same as in 2024.

The number of new OTF-W incidents in 2025 also dropped by 14% compared with 2024 (933 versus 1,070). Again, the highest proportion of OTF-W incidents occurred in the HRA (76%), followed by the Edge Area (20%) and LRA (4%).

Table 3.2.1 Number of new TB incidents in England, by bovine TB risk area, during 2024 and 2025.

	HRA	Edge Area	LRA	England
All new TB incidents in 2025 (Percentage of total for England)	**1,622 (76%)**	**405 (19%)**	**103 (5%)**	**2,130**
All new TB incidents in 2024 (Percentage of total for England)	1,897 (76%)	459 (19%)	123 (5%)	2,479
Percentage change in all new TB incidents from 2024 to 2025	**-14%**	**-12%**	**-16%**	**-14%**
New TB incidents in 2025 that were OTF-W (Percentage of total incidents for risk area)	**705 (43%)**	**189 (47%)**	**39 (38%)**	**933**
New TB incidents in 2024 that were OTF-W (Percentage of total incidents for risk area)	812 (43%)	221 (48%)	37 (30%)	1,070
Percentage change in new OTF-W TB incidents from 2024 to 2025	**-13%**	**-14%**	**5%**	**-14%**

3.2.1 Long term trends in the number of new TB incidents

From 1986 to 2000, before the foot and mouth disease (FMD) outbreak in 2001, the annual total number of new TB incidents increased by around 14% each year. The interval for the epidemic to double in size over that period was estimated at 5.3 years (see Figure 3.1.1a in Bovine tuberculosis in England in 2018).

Surveillance testing, control measures and movement patterns in cattle herds across GB were disrupted during and immediately after the FMD epidemic in 2001. The number of new TB incidents grew rapidly with a 25% annual rate of increase in 2002

relative to 2001.The rate of increase in all new TB incidents reduced once TB controls were re-established after the FMD epidemic.

From 2003 to 2010 the epidemic, represented by the quarterly numbers of new TB incidents detected in each year, continued a steady but significant upward trend (Figure 3.2.1).

The doubling and halving times, respectively, shown in Figure 3.2.1 indicate the time it would take for new incidents to double or halve in number, given the trend of the data. The R^2 value indicates ‘goodness of fit’ of the superimposed trend line to the raw data, with R^2 of 1 would indicate a perfect fit.

The annual rate of increase in the number of TB incidents over the period 2003 to 2010 was 6% with a doubling time of 12.8 years ($p=0.005$, $R^2=0.23$), calculated on quarterly total numbers of new TB incidents. Between 2011 and 2016 the epidemic in England reached a plateau (Figure 3.2.1).

The epidemic has been decreasing steadily since 2017. Between 2017 and 2025, the halving time for the quarterly number of TB incidents is 10 years ($p<0.001$, $R^2=0.7$), and the average annual rate of decrease is 6%. Although this is encouraging, the quarterly number of incidents occurring in 2025 is still more than double that from before the FMD epidemic.

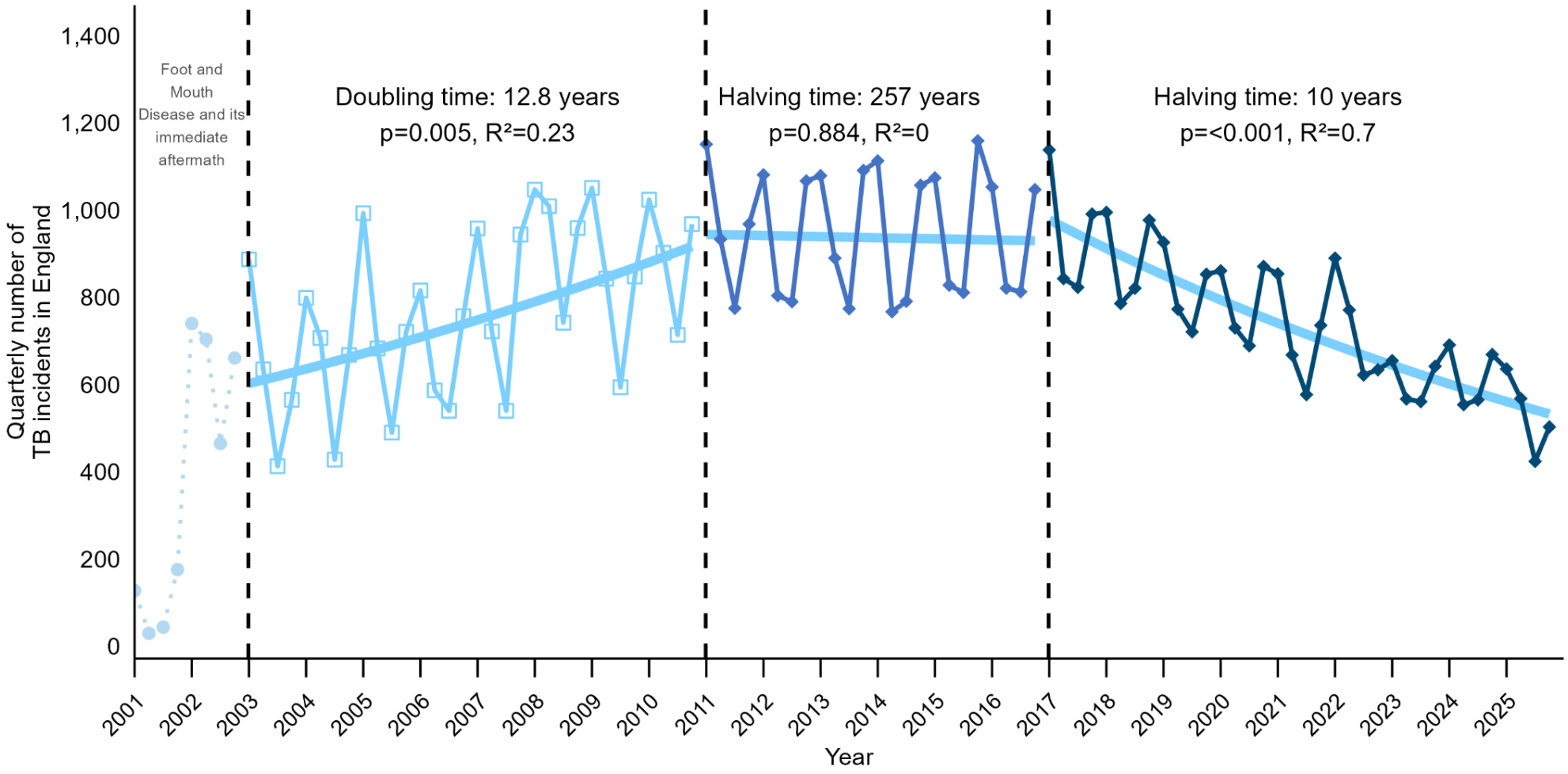


Figure 3.2.1 Quarterly total numbers of new TB incidents detected in England between January 2001 and December 2025.

There has been a declining trend in the number of new TB incidents since 2017 (3,795) except for 2022 (2,917) and 2024 (2,479), which saw slight increases on the previous years (3% and 2%, respectively). The rise in 2022 was due to an increase in the default testing frequency of herds in the HRA, from annual to 6-monthly testing, implemented in late 2020 and 2021 (Figure 3.2.2).

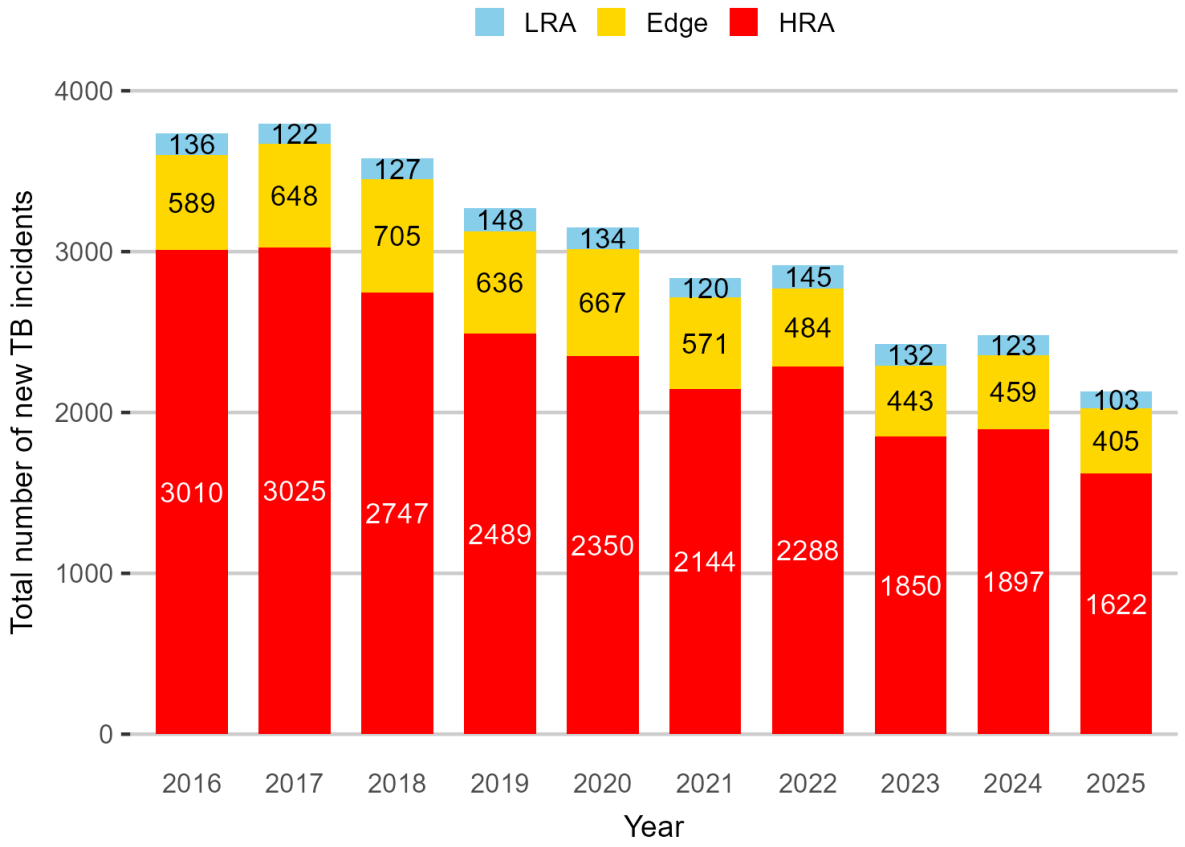


Figure 3.2.2 Total annual number of new TB incidents in England in the 10-year period between 2016 and 2025, by risk area.

3.2.2 Number of TB incidents in the HRA

In the HRA in 2025 there were 1,622 new TB incidents, of which 705 were OTF-W and the balance (917) were OTF-S. The total number of new TB incidents has seen an overall downward trend over the past 10 years (3,010 in 2016 versus 1,622 in 2025) (Figure 3.2.2). A downward trend was also observed in the percentage of OTF-W incidents (72% in 2016 compared to 43% in 2025).

Although incidents were spread throughout the HRA, areas such as the north-west of Shropshire, the north of Staffordshire, mid Devon, east Somerset, south Hereford and Worcester and west and north Cornwall appeared to have a higher number of incidents than the rest of the HRA (Figure 3.2.3).

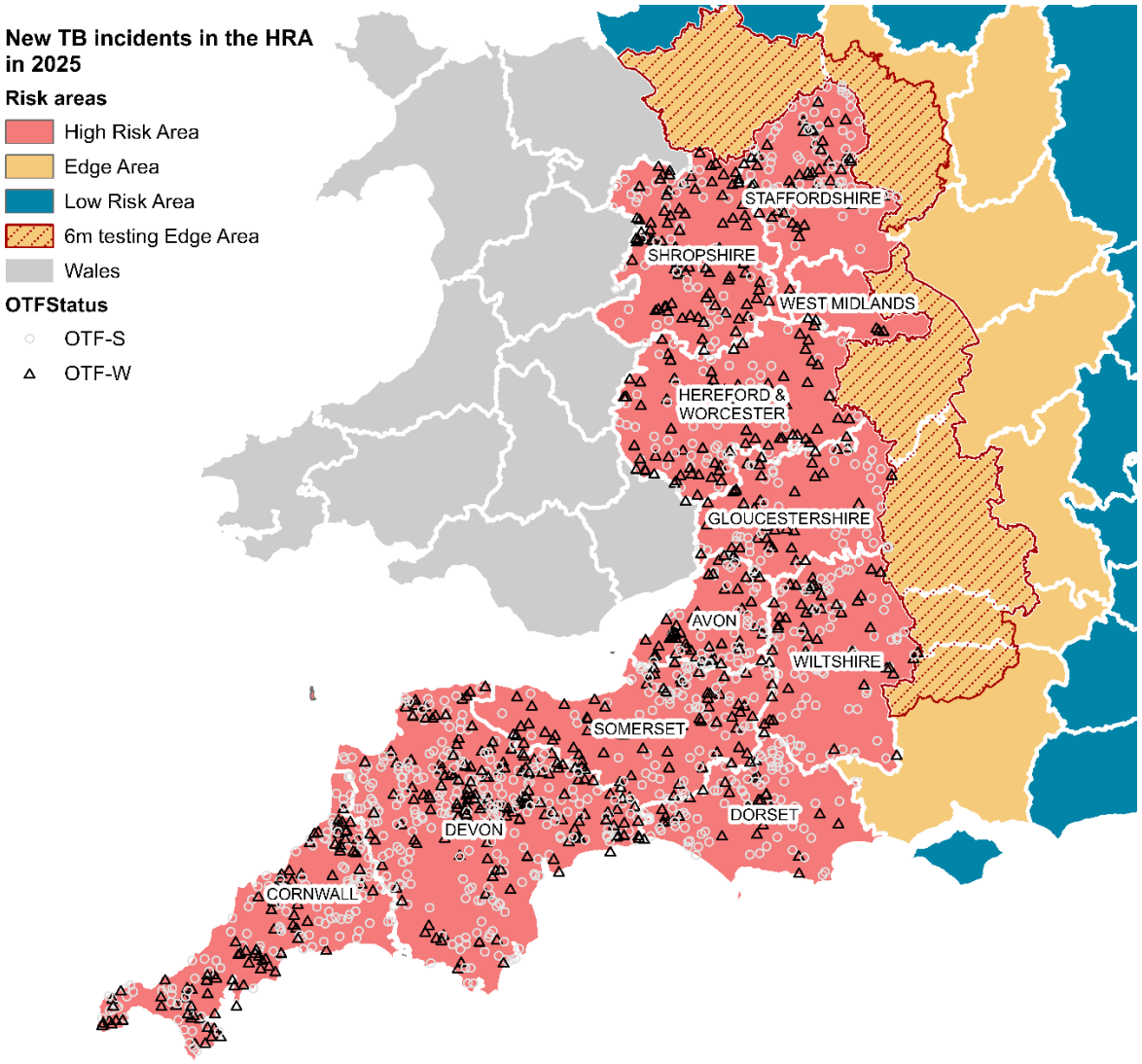


Figure 3.2.3 HRA county map, showing the locations of new TB incidents detected in the HRA in 2025.

Figure 3.2.3 map description: Map of HRA counties in 2025, and locations of cattle holdings with new TB incidents detected in the HRA in 2025. The incidents are spread throughout the HRA.

The number of new TB incidents in the HRA decreased by 14% in 2025 (1,622) compared to 2024 (1,897) (Figure 3.2.1), however this decrease was not statistically significant (p=0.793). The highest number of new TB incidents disclosed in the HRA in 2025 was in Devon (422), Cornwall (222) and Somerset (156). The lowest number of TB incidents in the HRA was recorded in the West Midlands (4), Avon (86) and Gloucestershire (95) (Figure 3.2.4). The number of new TB incidents decreased in 8

of the 11 HRA counties in 2025 compared to 2024, however none of these decreases were statistically significant ($p>0.05$).

Despite some fluctuations over time, all counties saw overall decreases in the number of new TB incidents in 2025 compared to 5 years before (2021), except for the West Midlands, which contains very few herds and experiences small numbers of incidents each year (3 in 2021 versus 4 in 2025), and Dorset, which stayed the same (102 incidents in both 2021 and 2025) (Figure 3.2.4).

The number of OTF-W TB incidents in the HRA decreased by 13% in 2025 (705) compared to 2024 (812), however this decrease was not statistically significant ($p=0.907$) (Figure 3.2.1). Compared to 2024, there was a reduction in the percentage of new OTF-W incidents in 2025 in 5 of the 11 HRA counties. Increases were observed in the West Midlands (25% in 2024 versus 100% in 2025), Shropshire (59% versus 60%), Hereford and Worcester (50% versus 57%), Somerset (45% versus 46%), Cornwall (34% versus 42%) and Devon (37% versus 38%). Counties with the lowest percentage of OTF-W incidents in 2025 were Dorset (26%) and Wiltshire (37%).

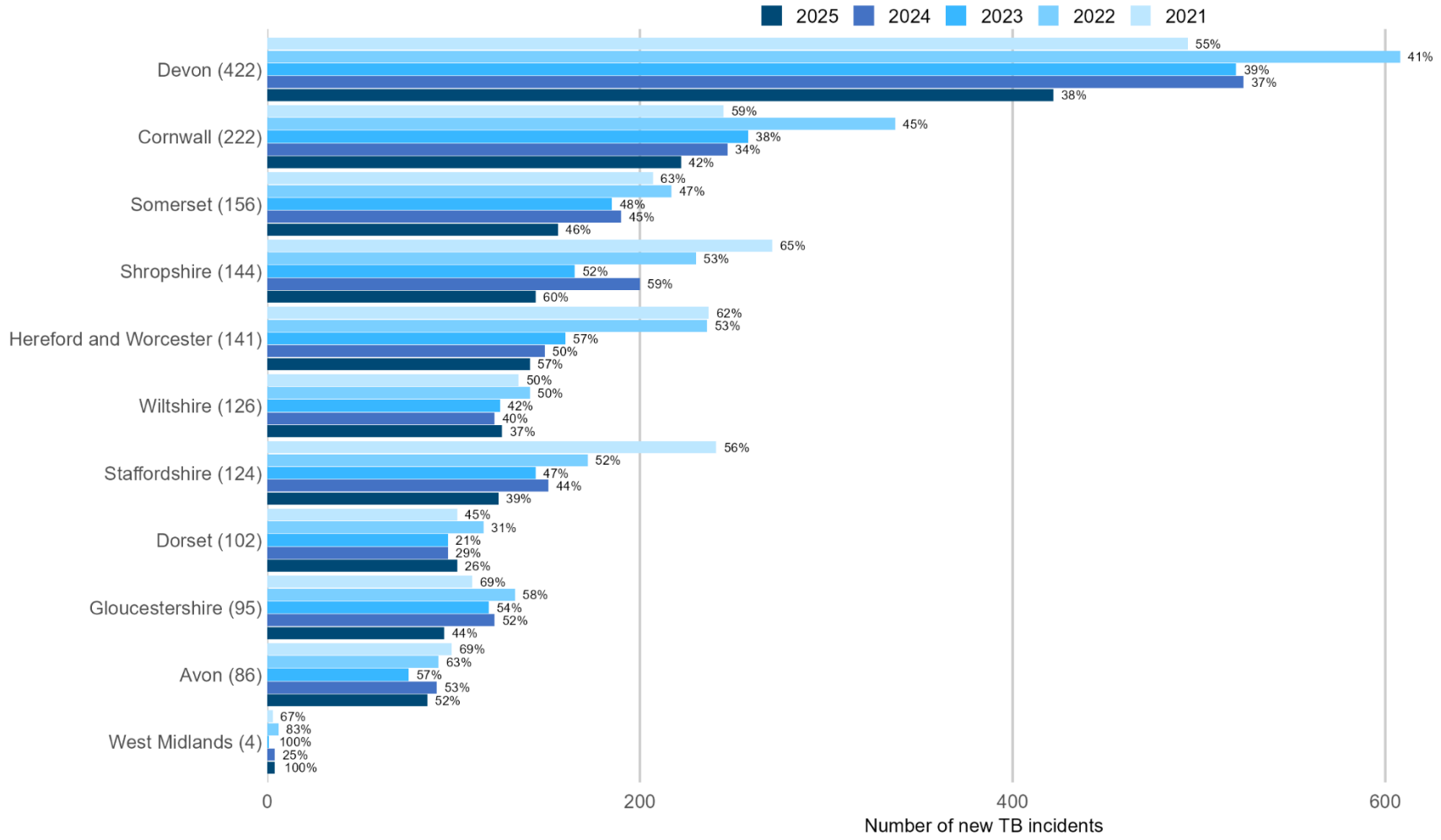


Figure 3.2.4 Annual total number of new TB incidents between 2021 and 2025, by HRA county. Data labels represent the percentage of new TB incidents with OTF-W status by year. Counties are presented in descending order of total new TB incidents recorded in 2025 (number given in parentheses)

3.2.3 Number of TB incidents in the Edge Area

In the Edge Area in 2025 there were 405 new TB incidents, of which 189 were OTF-W and 216 were OTF-S. The total number of new TB incidents has been decreasing in the Edge Area over recent years, from 667 in 2020 to 405 in 2025.

Most TB incidents were identified within the 6-monthly tested Edge Area bordering the HRA. The south-west of Derbyshire and the southern half of Cheshire showed comparatively high numbers of new TB incidents (Figure 3.2.5). There were also high numbers of new TB incidents in Leicestershire, near and within Hotspot (HS) 23, in Oxfordshire near the Warwickshire and Buckinghamshire border, and in the northern half of Buckinghamshire itself.

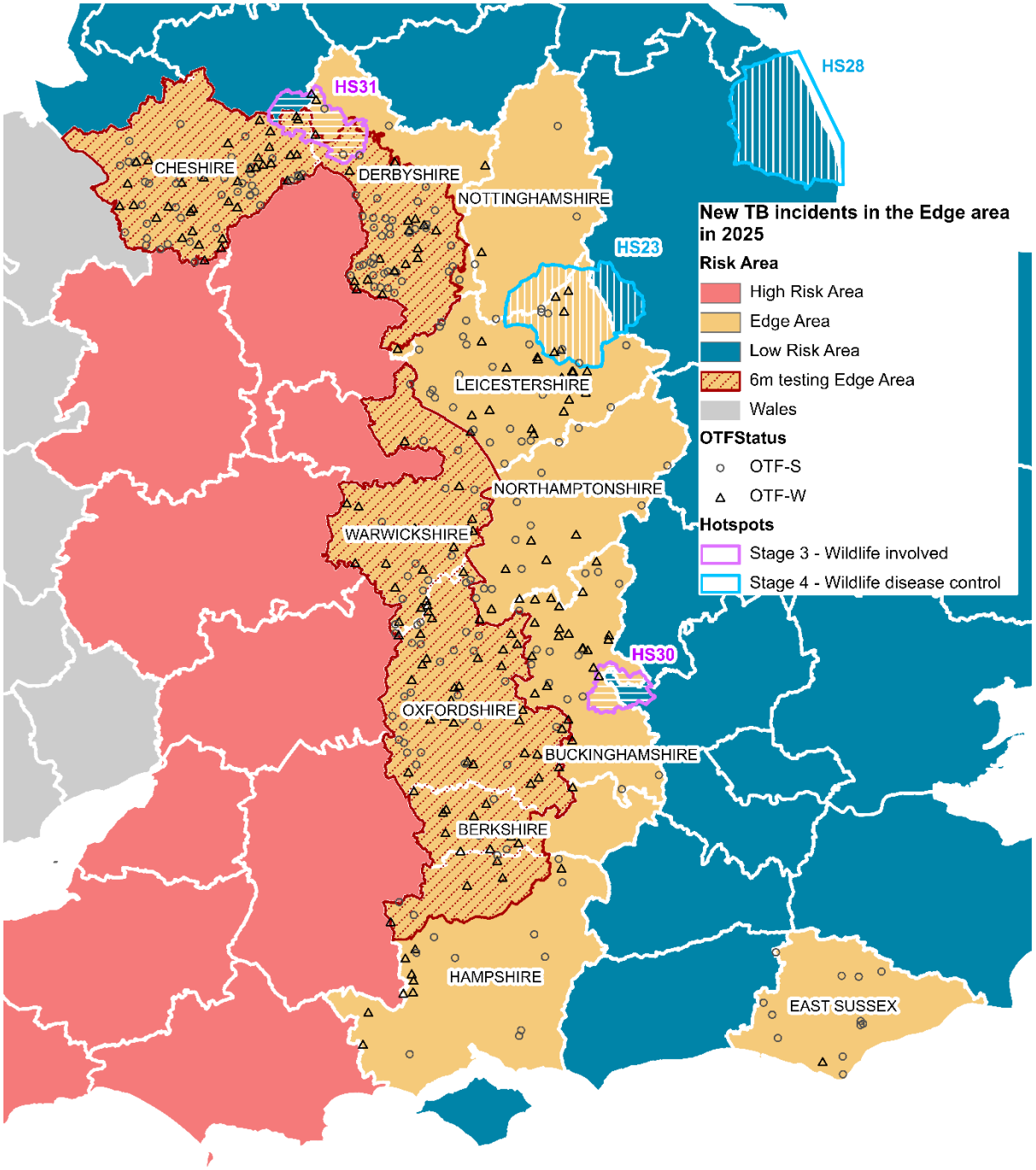


Figure 3.2.5 Edge Area county map, showing the areas under 6-monthly and annual routine herd testing, along with the location of holdings experiencing a new TB incident in 2025 and active TB hotspots.

Figure 3.2.5 map description: Map of Edge Area counties in 2025, showing the 6-monthly testing area within the Edge Area counties, and locations of cattle holdings with new TB incidents detected in the Edge Area in 2025. The incidents were spread mostly along the western border of the Edge Area with the HRA, and throughout East Sussex. TB hotspot areas that were active in 2025 and straddled the Edge Area and the LRA are shown with hashed lines. The colour of the hotspot, along with its

suffix, indicates the stage of controls in place in 2025: pink is stage 3 (S3) for wildlife involved, light blue is stage 4 (S4) for wildlife disease control.

The number of new TB incidents in the Edge Area decreased by 12% in 2025 (405) compared to 2024 (459), however this decrease was not statistically significant (p=0.693) (Figure 3.2.1). The number of new TB incidents disclosed in 2025 was highest in Cheshire (78), followed by Derbyshire (64) and Oxfordshire (63), whilst the lowest number of incidents were recorded in Nottinghamshire (8), East Sussex (14) and Berkshire (17) (Figure 3.2.6).

Despite Cheshire and Derbyshire being among the counties with the highest number of new TB incidents in the Edge Area, they saw a decrease compared to 2024. Six further counties saw fewer new TB incidents in 2025 compared to 2024, however none of these decreases were statistically significant.

Three Edge Area counties sustained increases in the number of new TB incidents: East Sussex (12 in 2024 versus 14 in 2025), Leicestershire (43 in 2024 versus 50 in 2025) and Oxfordshire (61 in 2024 versus 63 in 2025), none of which were statistically significant.

Reductions in the number of new TB incidents in 2025 compared to 5 years ago were observed in all Edge Area counties except Oxfordshire, Buckinghamshire and Hampshire. However, these increases were only slight, Oxfordshire (57 in 2021 versus 63 in 2025), Buckinghamshire (27 in 2021 versus 32 in 2025) and Hampshire (21 in 2021 versus 26 in 2025). Despite Cheshire disclosing the highest number of new TB incidents in the Edge Area in 2025, this county has experienced a steady decline over the previous 5 years, from 140 incidents in 2021 to 78 in 2025 (Figure 3.2.6).

The number of OTF-W TB incidents in the Edge Area decreased by 14% in 2025 (189) compared to 2024 (221), however this decrease was not statistically significant (p=0.870) (Figure 3.2.1). The percentage of new OTF-W TB incidents in the Edge Area decreased slightly between 2024 (48%) and 2025 (47%). There were reductions in the percentage of OTF-W incidents in 2025 in 5 of the 11 Edge Area counties. The counties with the highest increases were Berkshire (58% in 2024 versus 76% in 2025) and Nottinghamshire (10% in 2024 versus 25% in 2025). The counties with the highest percentage of OTF-W incidents in 2025 were Berkshire (76%) and Buckinghamshire (62%). By contrast, there was a marked reduction in the percentage of OTF-W incidents in East Sussex, (33% in 2024 to 7% in 2025) and Derbyshire (51% in 2024 to 34% in 2025). The counties of the Edge Area with the lowest percentage of OTF-W incidents in 2025 were East Sussex (7%) and Nottinghamshire (25%).

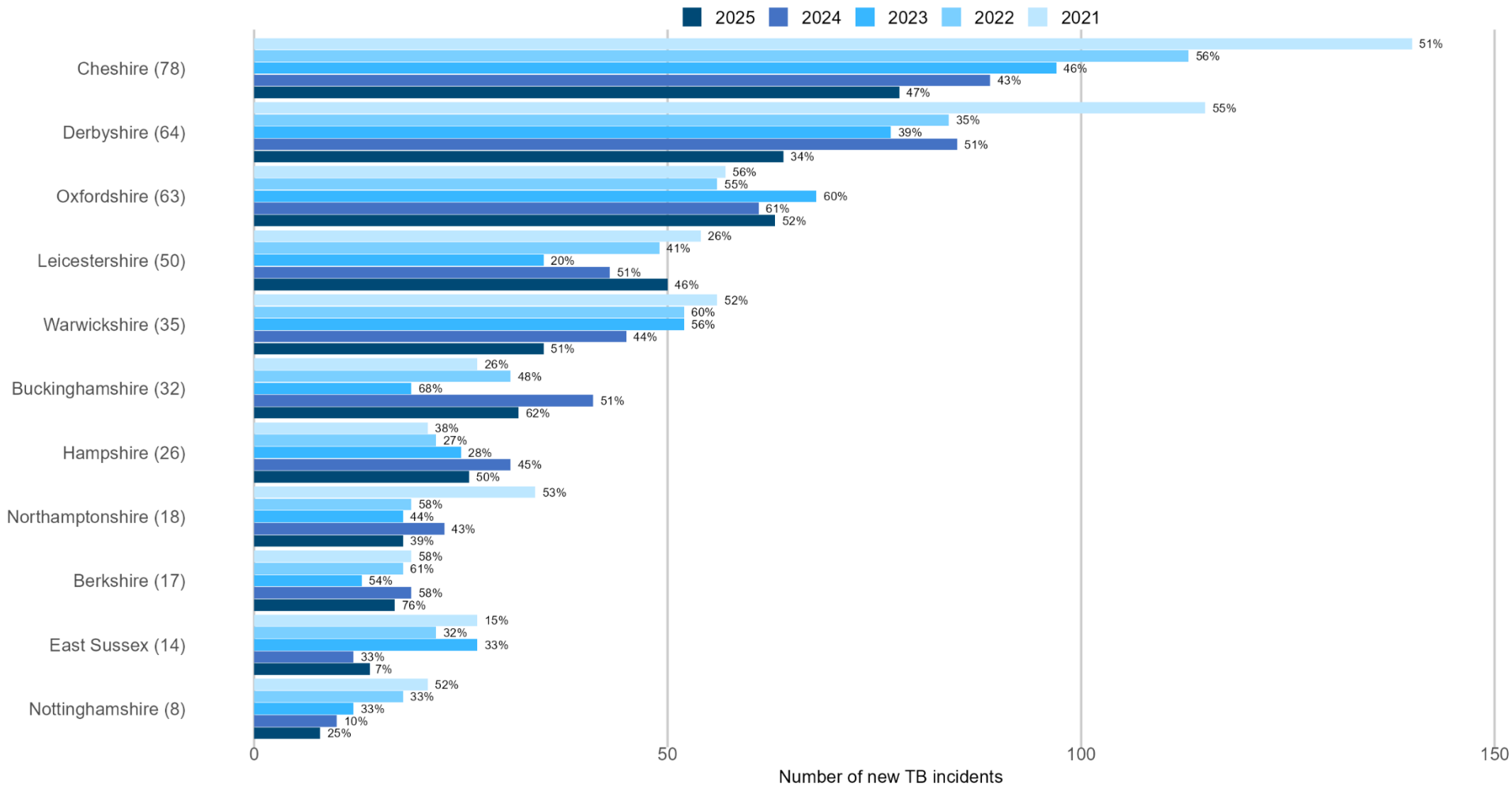


Figure 3.2.6 Annual total number of new TB incidents between 2021 and 2025, by Edge Area county. Data labels represent the percentage of new TB incidents with OTF-W status by year. Counties are presented in descending order of total new TB incidents in 2025.

3.2.4 Number of TB incidents in the LRA

There were 103 new TB incidents in the LRA in 2025, of which 39 were OTF-W and 64 were OTF-S.

Small numbers of new TB incidents were reported in most counties of the LRA, with some geographic clustering occurring mostly within and around active TB hotspot areas (Figure 3.2.7). During 2025 there were 6 active hotspots in the LRA (or straddling the LRA and Edge Area), with one (HS31) established in October 2025 in response to a cluster of cattle herd incidents in the Stockport area of Greater Manchester. No hotspots were closed during 2025. For more information see: April 2026: TB hotspots in the Low Risk Area of England - GOV.UK

For ease of reporting in the LRA and due to the low numbers of TB incidents, some of the counties are grouped into subregions: North East, North West, South East, Yorkshire and Humberside (Figure 3.2.7). Cumbria, Lincolnshire and the Isles of Scilly are reported separately as individual counties.

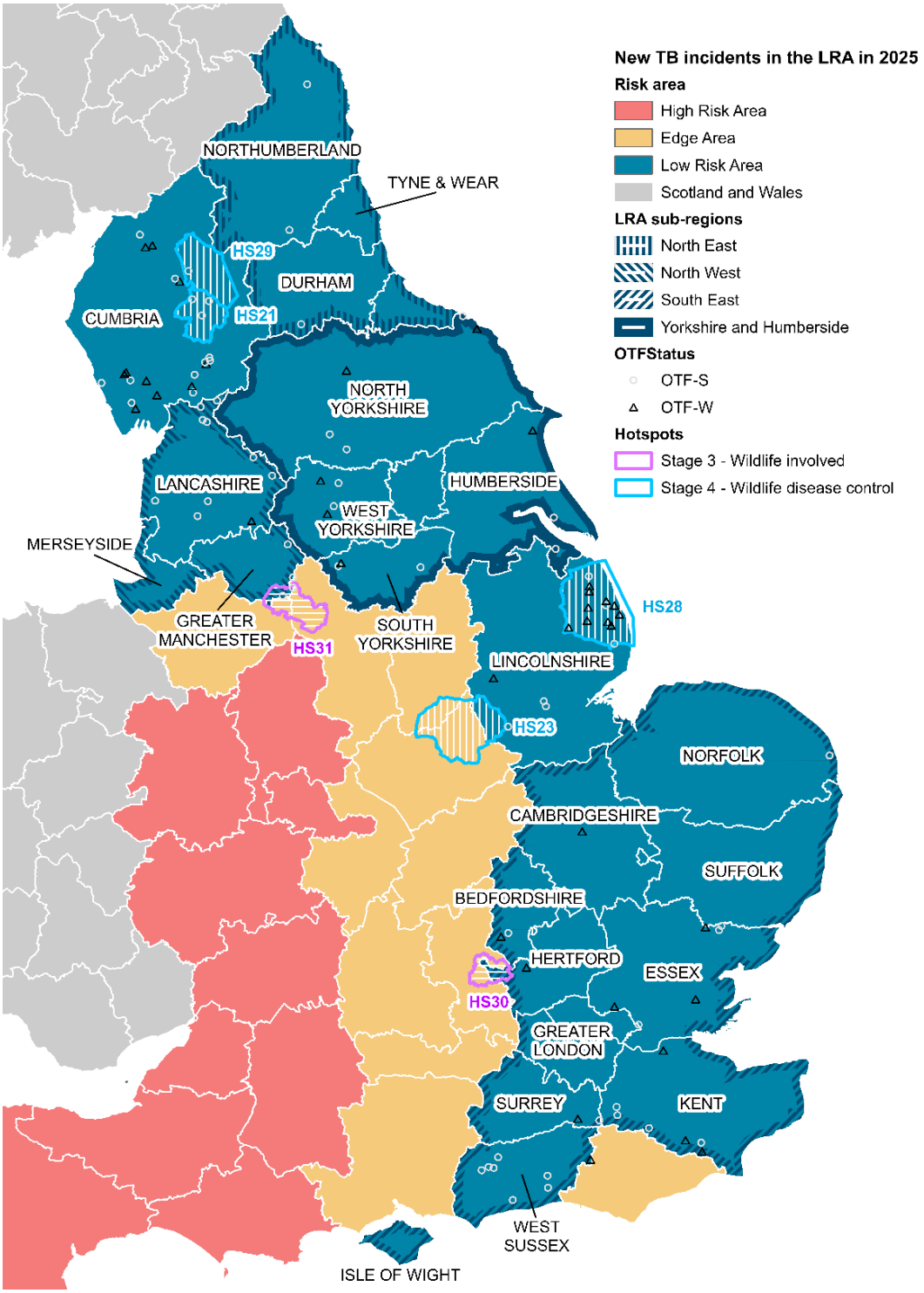


Figure 3.2.7 LRA county map, showing the location of incidents in 2025 (OTF-W and OTF-S), as well as hotspots that were active in 2025 (HS21, HS23, HS28, HS29, HS30 and HS31). NB Isles of Scilly not shown due to scale and the absence of any TB incidents there.

Figure 3.2.7 map description: Map of LRA counties and sub-regions in 2025, showing the locations of TB hotspots in England that were active at some point in 2025. TB hotspot areas are shown with hashed lines. The colour of the hotspot, along with its suffix, indicates the stage of controls in place in 2025: pink is stage 3

(S3) for wildlife involved, light blue is stage 4 (S4) for wildlife disease control. The incidents were spread throughout the LRA and hotspots HS23 and HS30, and HS31 also straddled the eastern and northern border of the Edge Area, respectively.

In the LRA, the total number of new TB incidents has decreased in recent years, from 120 in 2021 to 103 in 2025 (Figure 3.2.2). The percentage of OTF-W incidents in the LRA has remained relatively stable over recent years, between 28% and 38% from 2021 to 2025.

The number of new TB incidents in the LRA decreased by 16% in 2025 (103) compared to 2024 (123), however this decrease was not statistically significant (p=0.897) (Figure 3.2.1). The number of new TB incidents disclosed in 2025 was highest in the South East of the LRA (29) followed by Cumbria (24). Fluctuations in the number of new TB incidents between 2021 and 2025 were observed in all LRA counties and sub-regions. Reductions in the number of new TB incidents in 2025 compared to 5 years before were observed in all LRA counties and subregions except Cumbria (17 in 2021 versus 24 in 2025) and the South East of the LRA (26 in 2021 versus 29 in 2025). However, Cumbria did see a non-significant decrease in 2025 (24) compared to 2024 (39). The Isles of Scilly disclosed no new TB incidents in 2025, or indeed the previous 20 years.

The increase in the number of new TB incidents in the South East of the LRA (23 in 2024 versus 29 in 2025) was not statistically significant.

The number of OTF-W TB incidents in the LRA increased by 5% in 2025 (39) compared to 2024 (37), however this increase was not statistically significant (p=0.467) (Figure 3.2.1). The percentage of new TB incidents in 2025 with OTF-W status fell in 2 of the 6 LRA counties and subregions: Lincolnshire (67% in 2024 versus 61% in 2025) and the North East of the LRA (44% in 2024 versus 0% in 2025). There were no changes observed in the percentage of OTF-W incidents in 2025 for the North West of the LRA (7% in both 2024 and 2025). Increases were seen in Cumbria (28% in 2024 versus 42% in 2025), Yorkshire and Humberside (16% in 2024 versus 40% in 2025) and the South East of the LRA (26% in 2024 versus 38% in 2025).

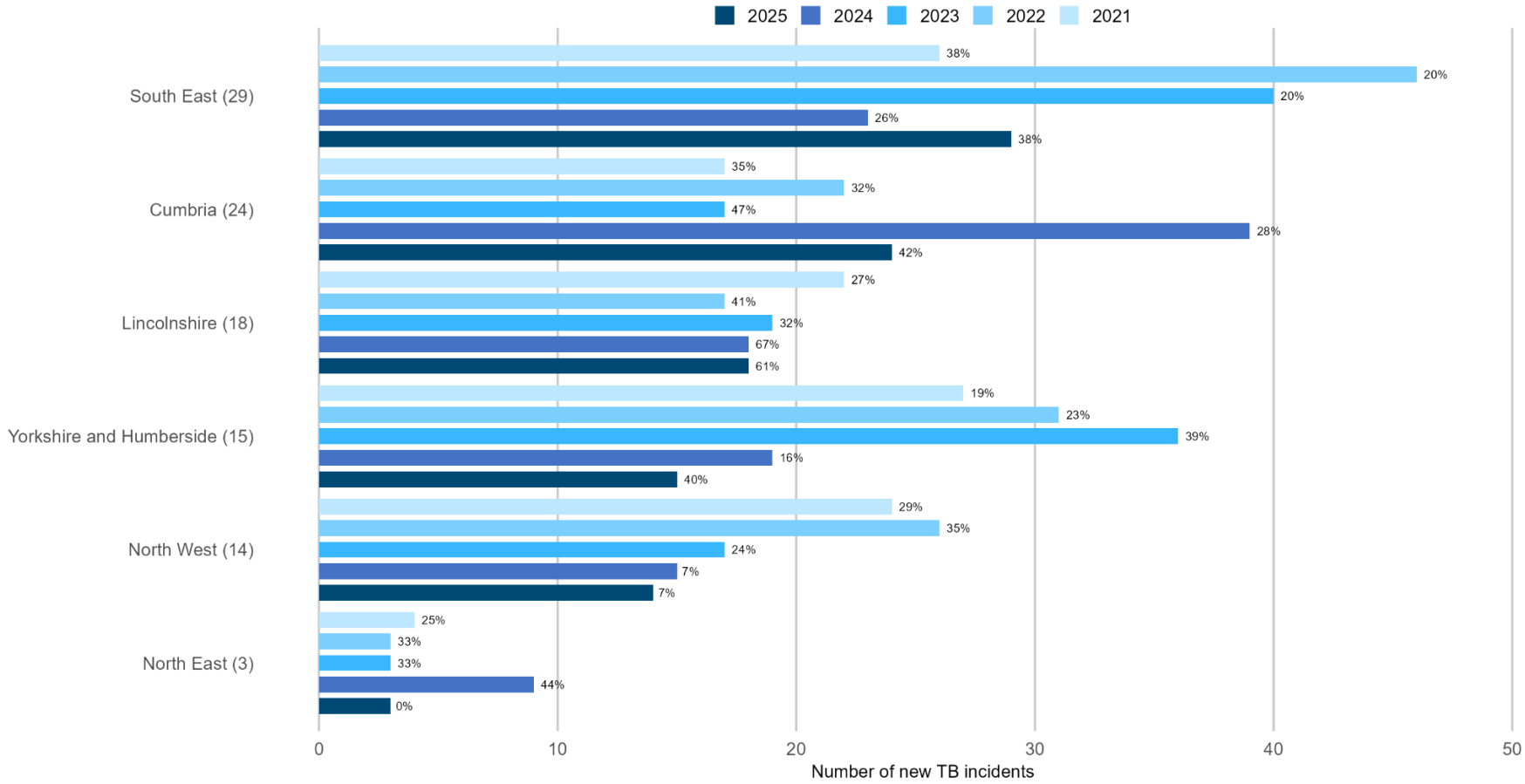


Figure 3.2.8 Annual total number of new TB incidents between 2021 and 2025, by LRA sub-region or individual county. Data labels represent the percentage of new TB incidents with OTF-W status by year. LRA counties and sub-regions are presented in descending order of number of new TB incidents in 2025. Note: The Isles of Scilly had no new TB incidents in the last 5 years, so they have been excluded from the figure.

3.3 Number of reactors and inconclusive reactors

3.3.1 Reactors

The single intradermal comparative cervical tuberculin (SICCT) test (or comparative skin test) is the primary TB screening tool for cattle in GB. When read at the standard interpretation (ST), a positive bovine reaction more than 4mm greater than a positive avian reaction is used to identify positive animals. At the severe interpretation (SEV), used to increase the sensitivity of the test, animals are considered positive if there is a 2mm greater bovine than avian reaction, or a positive bovine reaction and concurrent negative avian reaction depending on the circumstances in which the test is being performed. SEV interpretation is used for most short interval tests (SITs) carried out in TB incident herds in England and is also retrospectively applied to the results of the test that disclosed the TB incident. It entails the re-classification of some ST SICCT inconclusive reactors (IRs) as positive skin test reactors. It is therefore designed to increase the diagnostic sensitivity of the SICCT test, thus reducing the risk of leaving undisclosed infected animals in TB incident herds.

In 2025, 12,711 SICCT reactors were removed from TB incidents in England, of which 34% were read at the severe interpretation (Table 3.3.1). The majority (78%) of these were in the HRA. Of the 12,711 SICCT reactors, 772 were animals subsequently classified as reactors following 2 consecutive inconclusive test results (2xIRs) which was a 17% increase compared to 2024.

There were 6,981 additional animals removed as positive to the supplementary interferon gamma (IFN-γ) blood test (Bovigam™), a 15% increase from 2024, and 133 TB antibody (IDEXX) test positive animals removed, nearly half the number removed in 2024.

A total of 19,825 reactors were removed from TB incident herds in 2025, a 6% decrease since 2024.

Table 3.3.1 Number of reactors removed following the skin test at standard and severe interpretation, IFN-γ testing and antibody testing in England, by bovine TB risk area, during 2024 and 2025.

	HRA	Edge Area	LRA	England
Total number of SICCT reactors in 2025	**10,124**	**2,262**	**325**	**12,711**
Total number of SICCT reactors in 2024	11,539	2,769	344	14,652
• **Number of SICCT reactors in 2025 identified as 2xIRs**	**603**	**130**	**39**	**772**
• Number of SICCT reactors in 2024 identified as 2xIRs	481	134	46	661
• **Number of ST SICCT reactors in 2025**	**6,725**	**1,446**	**202**	**8,373**
• Number of ST SICCT reactors in 2024	7,816	1,814	222	9,852
• **Number of SEV SICCT reactors in 2025**	**3,399**	**816**	**123**	**4,338**
• Number of SEV SICCT reactors in 2024	3,723	955	122	4,800
Total number of IFN-γ test reactors in 2025	**5,396**	**1,212**	**373**	**6,981**
Number of IFN-γ test reactors in 2024	4,456	1,362	262	6,080
Total number of Antibody test reactors in 2025	**93**	**27**	**13**	**133**
Number of Antibody test reactors in 2024	100	108	55	263
Total 2025	**15,613**	**3,501**	**711**	**19,825**
Total 2024	16,095	4,239	661	20,995

Overall, 15,613 cattle were slaughtered following the disclosure of reactors in the HRA in 2025, a 3% decrease compared to 2024 (16,095). These comprised of 10,124 SICCT test reactors (65% of all reactors removed), 5,396 IFN-γ blood test-positive (35%) and 93 antibody test-positive animals (<1%). Compared to 2024, the number of SICCT test reactors and the number of TB antibody test-positive animals both decreased by 12% and 7%, respectively. Conversely, the number of IFN-γ blood test-positive animals increased by 21% compared to 2024. The total number of animals removed, and the percentage detected by each test type, varied by HRA county (Figure 3.3.1).

The HRA county with the greatest number of cattle removed in 2025 for TB control reasons was Devon (4,477 animals), where 33% of the animals removed were detected by IFN-γ testing. Cornwall had the next highest number of cattle removed in total (1,745 animals), of which 32% were removed as IFN-γ test positives. The counties with the highest proportion of cattle removed as IFN-γ test positives were Avon (43%), followed by Somerset (42%) and Staffordshire (39%) (Figure 3.3.1).

Decreases in the number of IFN-γ positive animals removed in 2025 compared to 2024 were observed in Cornwall, Shropshire and Hereford and Worcester, where the percentage fell by 21%, 10%, and 2%, respectively. IDEXX antibody test positives were only observed in Gloucestershire (63), Devon (17), Somerset (5), Wiltshire (4), Hereford and Worcester (3) and Avon (1). More information on blood testing can be found on the TB hub.

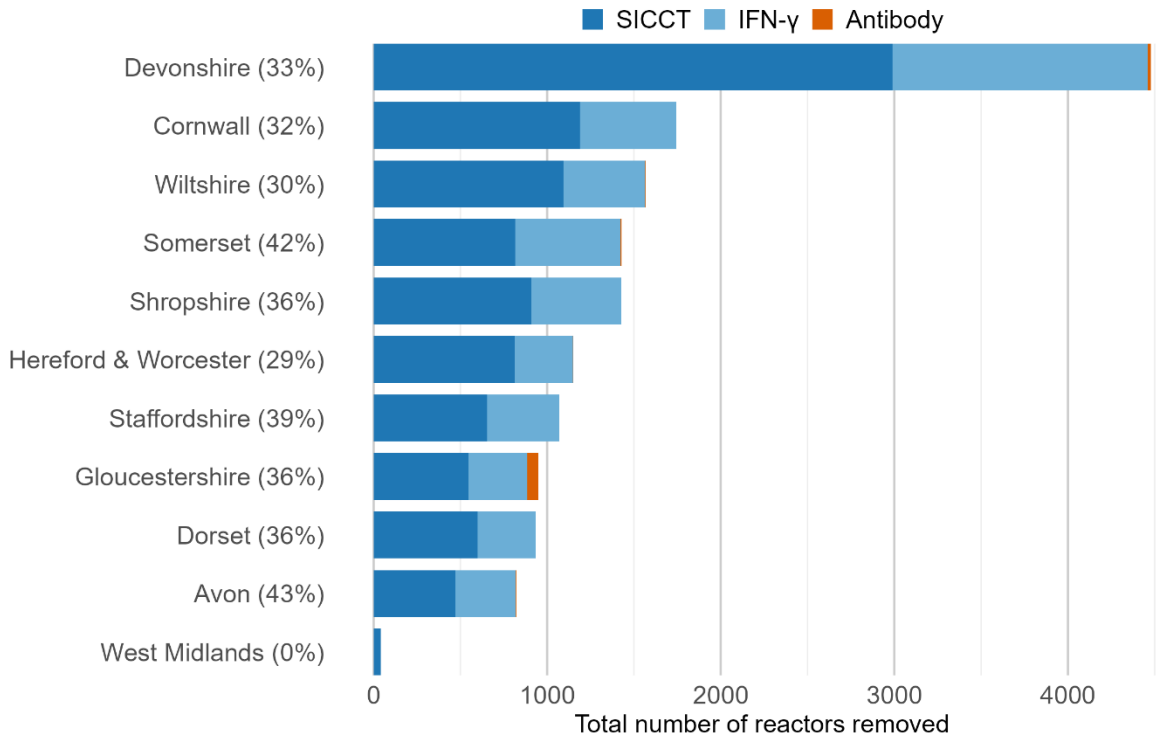


Figure 3.3.1 Number of cattle removed in the HRA in 2025 as SICCT test reactors, IFN-γ or IDEXX antibody test positives, by HRA county. Counties are ranked by total number of animals removed for TB control reasons (percentage of animals removed per county due to positive IFN-γ test results are shown in parentheses).

The number of reactors removed in the HRA over the past 10 years has been steadily declining since a peak in 2017 (24,820). In 2025 the figure dropped by 3% compared to 2024 (16,095 in 2024 versus 15,613 in 2025) (Figure 3.3.2).

In the HRA, 739 cattle were removed as either 1xIRs before retesting (222) or as direct contacts (517), representing 79% of the England total for these categories. A further 603 cattle were removed as 2xIRs, representing 78% of all 2xIRs removed in England in 2025 (Figure 3.3.2).

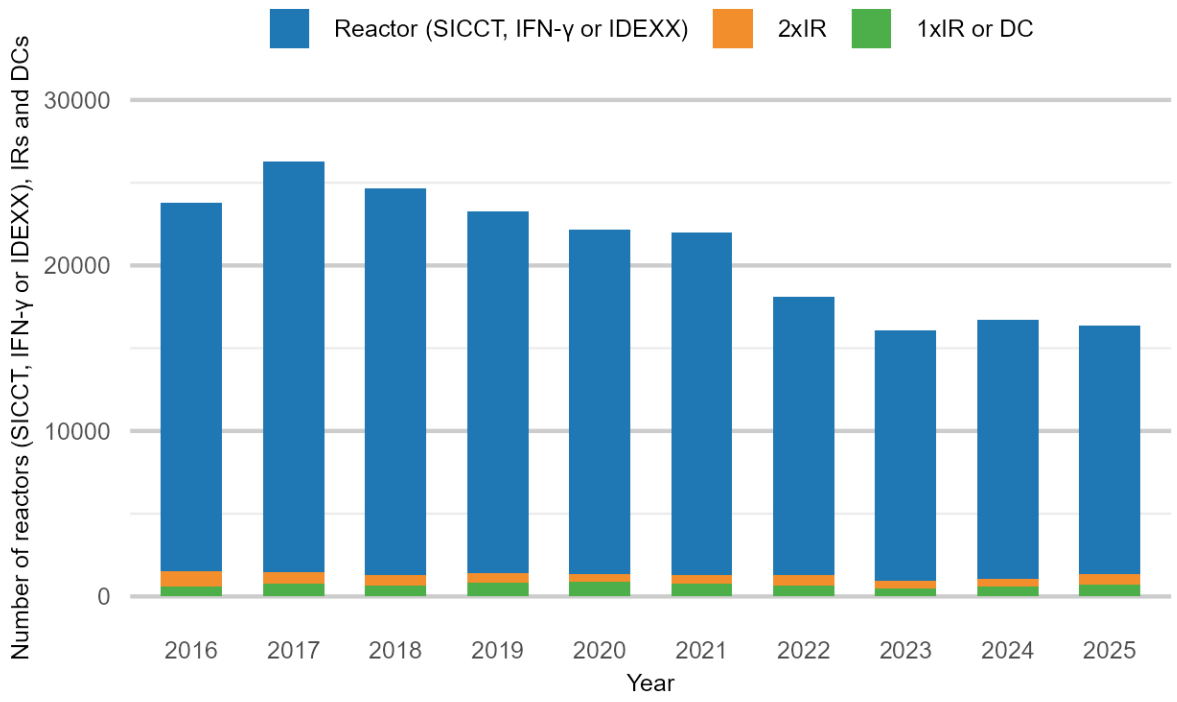


Figure 3.3.2 Number of reactors (SICCT test reactors, IFN-γ or IDEXX antibody test positives), 2x inconclusive reactors shown separately, 1x inconclusive reactors and direct contacts removed from herds in the HRA between 2016 and 2025. IR = inconclusive reactor, DC = direct contact.

The Edge Area saw a decrease of 17% in the number of reactors in 2025 (3,501) compared to 2024 (4,239) (Figure 3.3.3). In the past decade there was a steep increase in the number of reactors removed between 2016 (4,356) and 2018 (7,394). This was followed by a gradual decline to 3,190 in 2023. The numbers of animals removed as 1xIRs or DCs and 2xIRs in the Edge Area has fluctuated slightly over the last 10 years. The number of 1xIRs (50) or DCs (106) and 2xIRs decreased in the Edge Area (205 in 2024 to 156 in 2025 and 134 in 2024 to 130 in 2025, respectively).

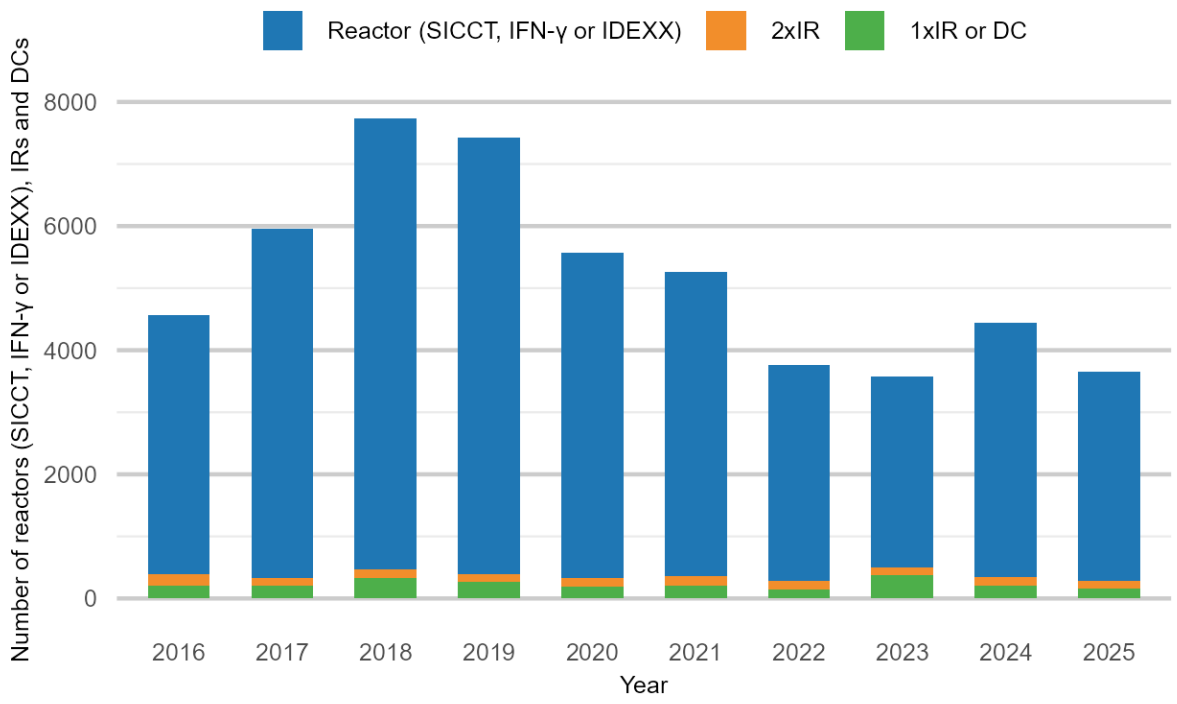


Figure 3.3.3 Number of Reactors (SICCT test reactors, IFN-γ or IDEXX antibody test positives), inconclusive reactors and direct contacts removed from herds in the Edge Area between 2016 and 2025. IR = inconclusive reactor, DC = direct contact.

In the LRA, the number of reactors reached a peak in 2017 (901) dropping by 62% to 341 in 2020, the lowest in 10-year period of interest (2016 to 2025) (Figure 3.3.4). It has since increased to 711 in 2025 but remains lower than its peak in 2017. The number of 1xIR (12) or DCs (28) and 2xIRs has remained stable in the LRA with less than 60 and 80 removed per year since 2015, respectively.

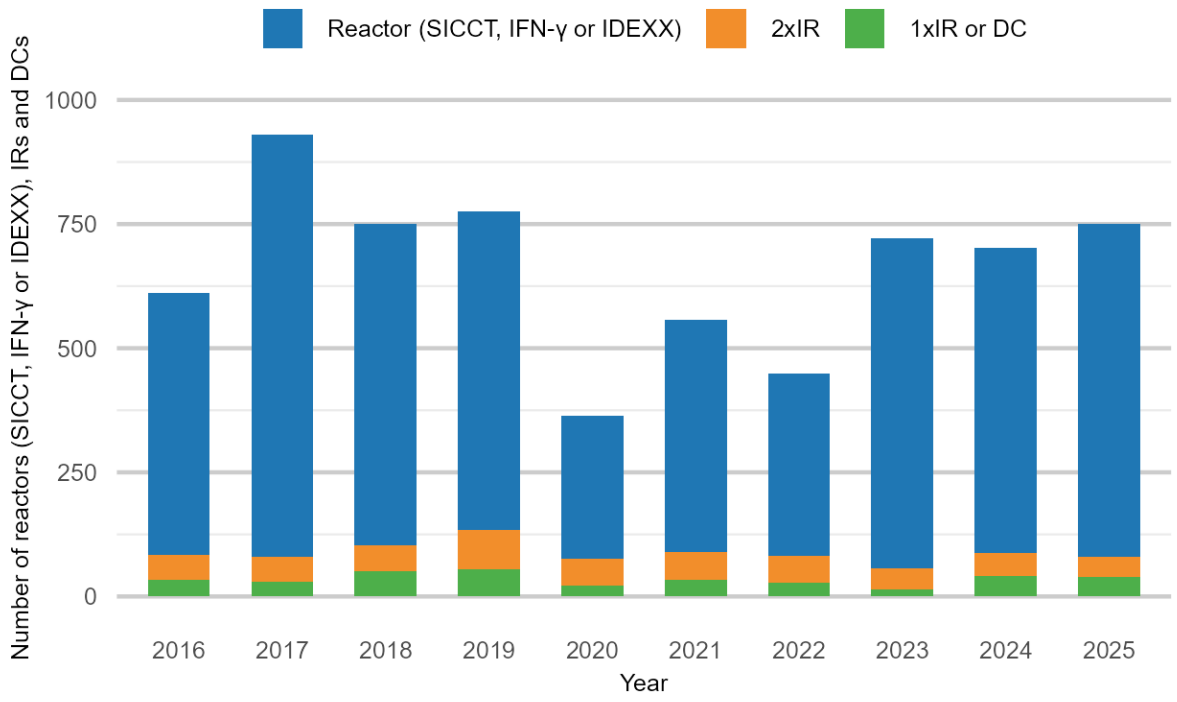


Figure 3.3.4 Number of reactors (SICCT test reactors, IFN-γ or IDEXX antibody test positives), inconclusive reactors and direct contacts removed from herds in the LRA between 2016 and 2025. IR = inconclusive reactor, DC = direct contact.

The average (mean) number of test reactors removed per TB incident in the HRA (and in England as a whole) was relatively stable between 2016 and 2018 but then started to climb between 2018 and 2020. The trend subsequently declined at a steady rate until 2024 when it began to rise again (Figure 3.3.5).

A similar pattern was observed in the Edge Area: however, an increase was observed earlier, between 2017 and 2019. There was a subsequent decline until the beginning of 2024, when the mean number of reactors started to rise again.

In the LRA the mean number of reactors increased between 2016 and 2018. Since this time there has been a steady decline until a plateau observed between 2021 and 2023. The average number of reactors in the LRA has been increasing since 2024.

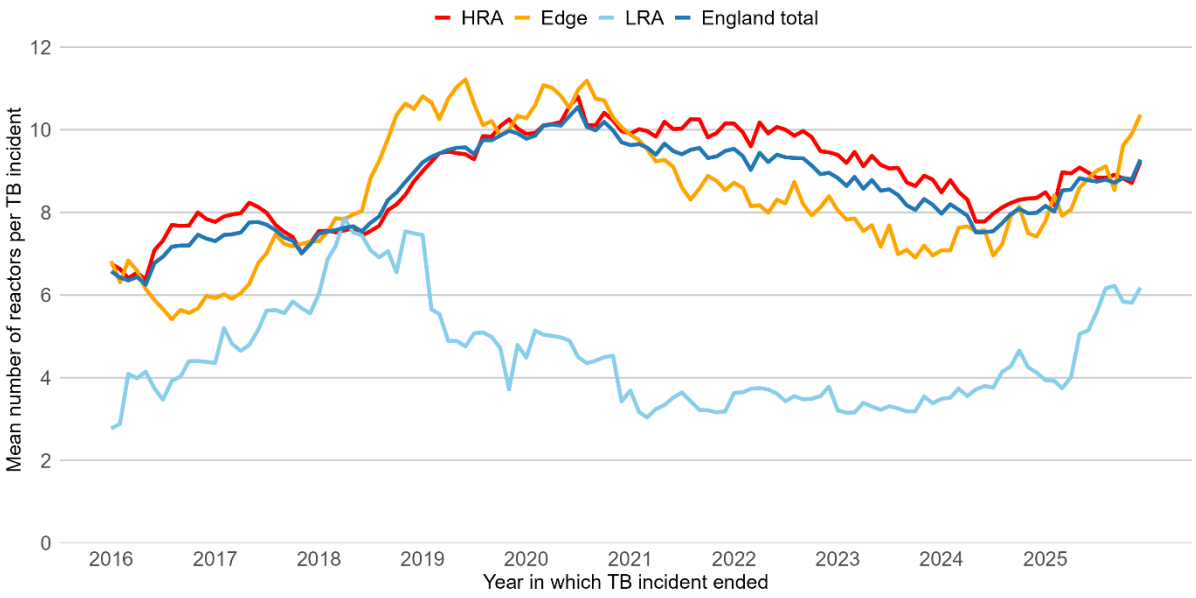


Figure 3.3.5 Monthly rolling mean total number of test reactors taken per TB incident that ended between January 2016 and December 2025, by risk area (12-month moving average). Test reactors include SICCT reactors and IFN-γ test positive animals only.

The overall distribution of the number of reactors removed per TB incident was very similar in the HRA and Edge Area (Figure 3.3.6). Sixty-seven percent of TB incidents that were resolved in 2025 in England had 2 or more reactors, largely driven by the HRA and Edge Area (both 68%, whereas the equivalent percentage for the LRA was 48%).

Of the TB incidents that ended in 2025 (irrespective of start year), 109 generated no reactors (96 in the HRA, 11 in the Edge Area, and 2 in the LRA), these were incidents initiated by a slaughterhouse case. This was a decrease compared to 234 TB incidents in 2024.

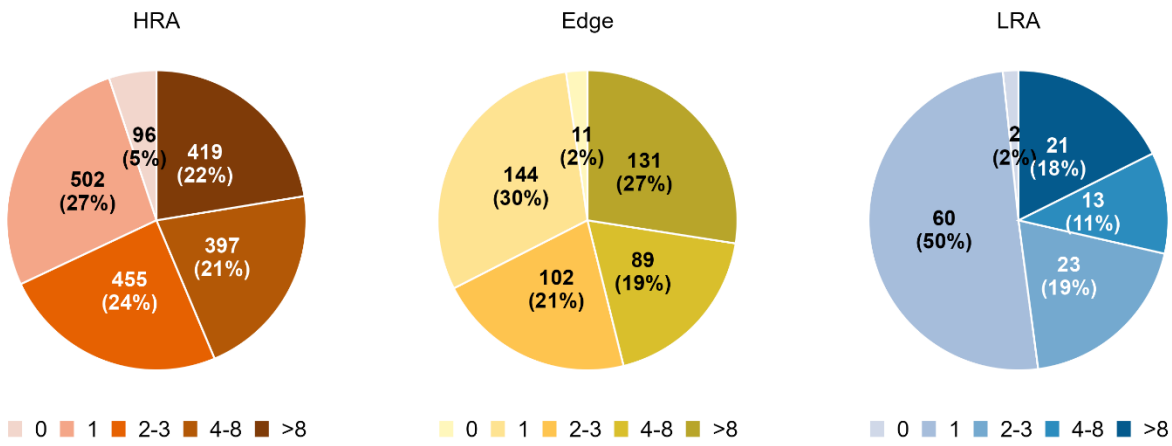


Figure 3.3.6 The three charts above show the distribution of the number of TB incidents that ended in 2025, by total number of reactors removed per incident, for each risk area of England.

3.3.2 Inconclusive reactor only herds

Inconclusive reactors (IRs) are cattle displaying a positive skin reaction to bovine tuberculin that is greater than a concurrent avian tuberculin reaction, but not strong enough to classify them as reactors to the SICCT test. These animals must remain isolated from their herd pending another skin test 60 days later. IRs that do not give a negative result at the retest are removed as either skin test reactors or 2xIRs, thus triggering a new TB incident if their herd was OTF.

An IR-only herd is defined as an OTF herd which only had IRs at the initial test, with no concurrent reactors. Most IR-only herds (69%) and IRs disclosed in such herds (73%) in 2025 were detected in the HRA followed by the Edge Area (21% and 18%, respectively) and LRA (10% and 9%, respectively) (Table 3.3.2).

Between 2024 and 2025, there was a decrease in the number of IR-only herds (and the number of IRs in those herds) disclosed in England. This trend was also observed in the HRA and Edge Area. In contrast, the LRA saw a rise in the number of IR-only herds and number of IRs disclosed within IR-only herds.

Table 3.3.2 Number (and percentage) of IR-only herds in 2025, total number of IR animals detected in those herds by risk area, and percentage change between 2024 and 2025.

	HRA	Edge Area	LRA	England
Number of IR-only herds (% of all IR-only herds in England)	1,439 (69%)	427 (21%)	213 (10%)	2,079
(% change 2024-25)	(-8%)	(-3%)	(+4%)	(-6%)
Number of IRs disclosed in IR-only herds (% of all IRs disclosed in IR-only herds in England)	3,030 (73%)	766 (18%)	374 (9%)	4,170
(% change 2024-25)	(-5%)	(-4%)	(+3%)	(-4%)

A multivariable analysis (Brunton et al. (2018)) showed that the risk posed by IRs in the HRA and Edge Area was substantially reduced if those animals became reactors or 2xIRs at the 60-day retest and were removed from herds. However, IRs that pass the retest can still pose a significantly increased risk of being identified as TB test reactors or slaughterhouse cases for around 2.5 years from first disclosure. This indicates that IRs are an important predictor of presence of infection in the herd. Retesting IRs after 60 days mitigates much of the risk posed by those animals. In England, all resolved IRs (those with a negative result at the 60-day retest) in the HRA and Edge Area (including those from IR-only herds) and resolved IRs from TB incident herds in the LRA, are permanently restricted to the herd in which they are disclosed, which aims to reduce the risk further. It may be possible to have these restrictions lifted, with a negative result from an approved privately funded IFN-γ test.

In 2025, 40% of IR-only herds in the HRA went on to have a TB incident within the following 15 months, compared to 32% in the Edge Area and 18% in the LRA (Figure 3.3.7). This compares to 39% in the HRA, 32% in the Edge Area and 21% in the LRA in 2024.

Across all risk areas, a higher proportion of IR-only herds progressed to OTF-S than OTF-W status, both at the immediate IR retest (approximately 60 days after the initial IR detection) and at a subsequent skin test within 15 months (Figure 3.3.7). Percentages for outcomes at the subsequent test are calculated among IR-only herds that had not already progressed to a TB incident at the immediate retest and therefore have a smaller denominator than the retest percentages.

In the HRA, 13.3% of IR-only herds became OTF-S and 4.2% became OTF-W at the immediate IR retest. Among herds that had not progressed to a TB incident at the retest, 17.4% became OTF-S and 9.8% became OTF-W at a subsequent test.

In the HRA, overall, 17.5% of IR-only herds progressed to a TB incident at the immediate IR retest and a further 22.4% experienced a TB incident at a subsequent test within 15 months (Figure 3.3.8).

This was similar in the Edge Area, where the proportion of OTF-S incidents was greater than OTF-W incidents at both the immediate IR retest (16.2% vs 4.7%) and at subsequent testing of those which had not progressed to a TB incident at the retest (8.9% vs 5.0%). Overall, 20.8% of IR-only herds progressed to a TB incident at the immediate IR retest, compared with 11.0% at a subsequent test within 15 months (Figure 3.3.8).

In the LRA, the proportion of OTF-S incidents was greater than for OTF-W incidents at both the immediate IR retest (13.6% vs 1.9%) and at subsequent testing of those which had not progressed to a TB incident at the retest (2.2% vs 1.1%). As shown in Figure 3.3.8, a substantially greater proportion of TB incidents were identified at the immediate IR retest than at a subsequent test (15.5% vs 2.8%, respectively). The large percentage of IR-only herds in the LRA with fate unknown is due to no subsequent whole herd test within the 15 months follow up period.

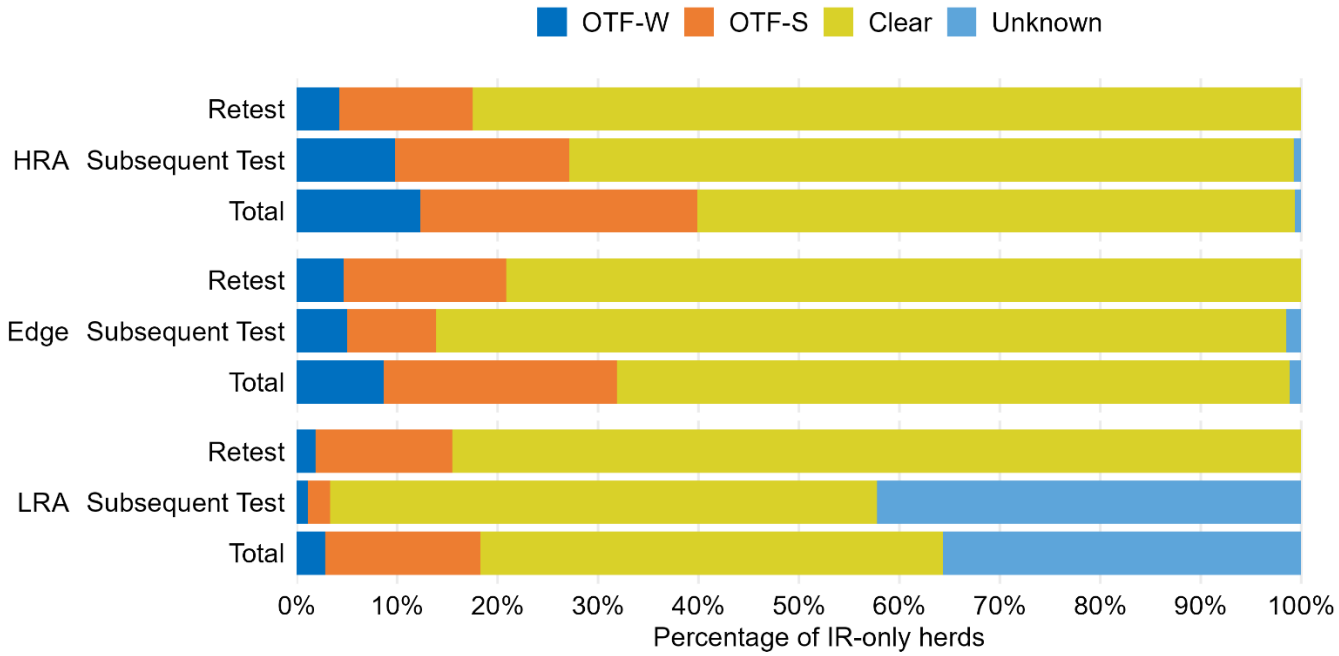


Figure 3.3.7 Fate of IR-only herds in the 15 months following disclosure of IRs in 2025, by risk area and timing of outcome detection (immediate IR retest or subsequent skin test). The denominator for Retest is the total number of IR-only herds and the denominator for Subsequent test is those IR-only herds which did not previously progress to a TB incident at the immediate retest.

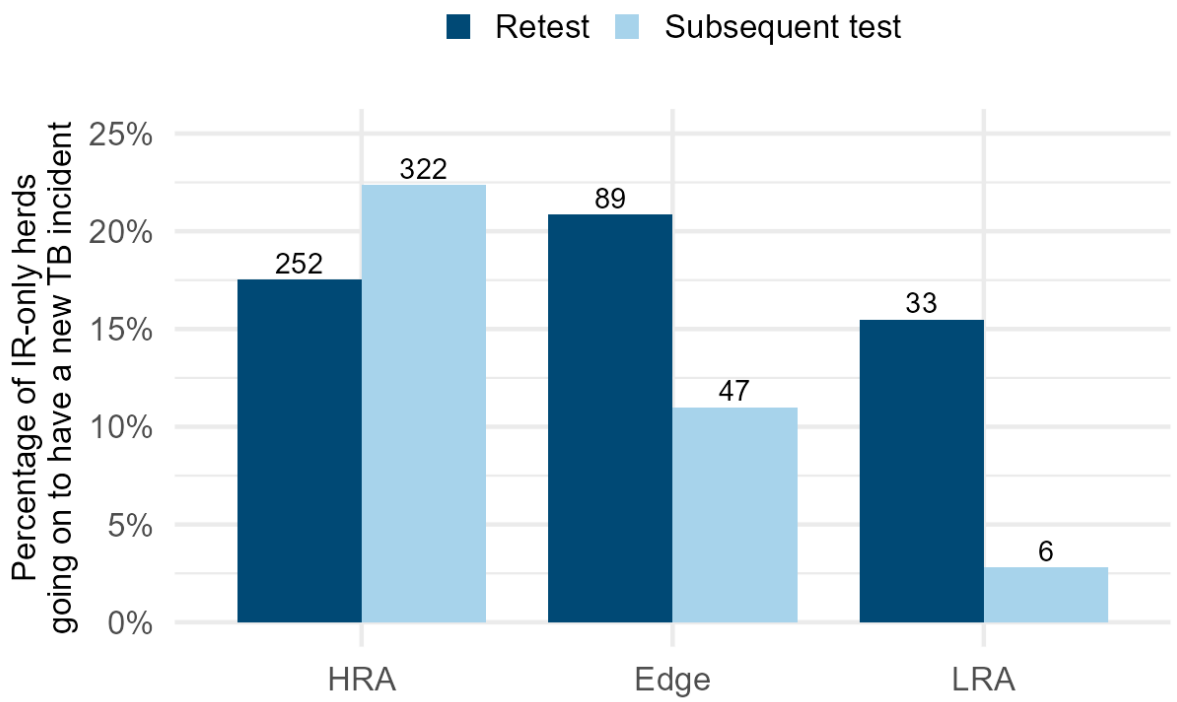


Figure 3.3.8 Proportion of IR-only herds that had a new TB incident in 2025 at either the immediate IR retest 60 days after first detection, or a subsequent skin test (within 15 months after the IR test), by surveillance risk area. The denominator is the number of IR-only herds and the number shown above each column represents the total number of herds with a TB incident.

3.3.3 Post-mortem findings in cattle slaughtered for TB control purposes.

In 2025, a total of 20,760 cattle were slaughtered for TB disease control purposes in England (including non-reactor cattle removed as direct contacts), a 6% decrease compared to 2024 (n=21,989). Most cattle slaughtered were skin and/or IFN-γ blood test reactors (91.8%). The remaining 8.2% were removed as either 2xIRs, 1xIRs (before re-testing) voluntarily by the keeper (5.1%), or by APHA as direct contacts (3.1%, Figure 3.3.9).

Almost all cattle slaughtered for TB control purposes are subjected to post-mortem meat inspection (PMMI) in a small number of designated slaughterhouses contracted by APHA for that purpose, but not every TB-affected animal is sampled at slaughter for confirmatory laboratory testing and whole-genome sequencing (WGS) of M. bovis. For incident control purposes, confirmation of infection with M. bovis entails the detection of typical visible lesions of TB at PMMI in at least one slaughtered test reactor ('VL reactors'), or the identification of M. bovis by bacteriological culture or PCR testing in at least one animal in the affected herd.

The results of the SICCT test can be read at standard (ST) or severe (SEV) interpretation, as explained above in Section 3.3.1.

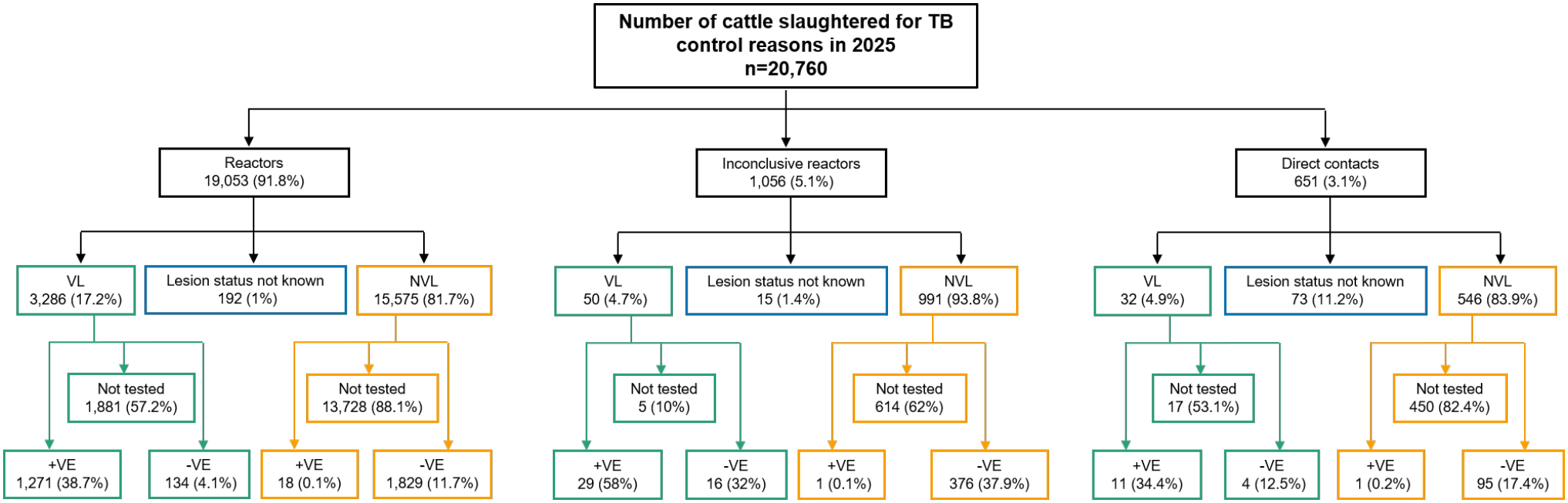


Figure 3.3.9 Diagram showing the number of cattle slaughtered for TB control reasons in England in 2025 by the reason for slaughter, the lesion status (visible lesions (VL), lesion status not known and non-visible lesions (NVL)) and the number (and percentage) of those where the presence of M. bovis was (+VE) and was not (-VE) detected by confirmatory laboratory tests (PCR or bacteriological culture) in post-mortem tissue samples. Atypical lesions are categorised as non-visible lesions; there was one atypical lesion detected in 2025. In this diagram reactors are SICCT test reactors, IFN-γ or IDEXX antibody test positives only, Inconclusive reactors are 2xIRs (772, Table 3.3.1) and 1xIRs voluntarily culled by their keepers before retesting, and Direct contacts are non-reactor animals considered at high risk of infection and compulsorily slaughtered by APHA.

In England, 18,920 cattle were removed following the disclosure of skin test and IFN-γ blood test reactors (excluding 133 IDEXX antibody test positives) in 2025.

Of the 8,373 animals removed due to a positive ST SICCT test, 28% had visible lesions (VLs) at slaughter and/or M. bovis detected by PCR or culture (Figure 3.3.10). The absence of visible lesions or laboratory confirmation should not be interpreted as evidence that an individual animal was not infected, as not all animals underwent confirmatory laboratory testing and the ability of PCR or culture to detect M. bovis is influenced by factors including sample quality and bacterial load.

Of the 3,566 animals removed due to a positive SEV SICCT test, 7% had VLs at slaughter and/or M. bovis detected by PCR or culture (Figure 3.3.10). A total of 6,981 animals were removed due to a positive supplementary IFN-γ blood test, of which 10% had VLs or evidence of M. bovis presence.

The HRA had the smallest proportion (27%) of ST SICCT reactors with VLs at slaughter and/or M. bovis detected by PCR or culture, of all the risk areas. The proportion of IFN-γ test positive animals and SEV SICCT reactors which had VLs or further evidence of M. bovis presence in the HRA was 10% and 7%, respectively.

In the Edge Area, nearly a third (32%) of ST SICCT positive animals had VLs at slaughter and/or M. bovis detected by PCR or culture, which was higher than in the HRA. The proportion of IFN-γ reactors that had VLs at slaughter and/or M. bovis detected by PCR or culture, was the same as the HRA (10%). A higher proportion of SEV SICCT reactors had VLs or further evidence of M. bovis presence in comparison to the HRA (9%).

In the LRA, the proportion of ST SICCT reactors that had VLs or further post-mortem evidence of M. bovis infection was the same as the Edge Area (both 32%).

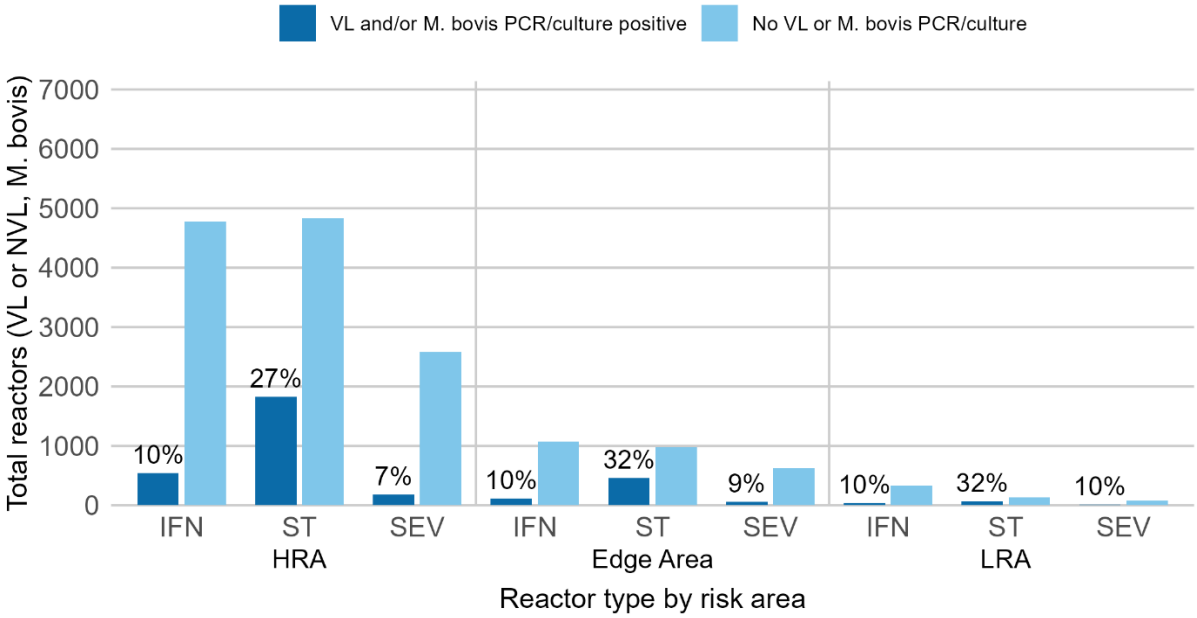


Figure 3.3.10 Number and percentage of reactors (SICCT or IFN-γ test) removed from TB incident herds in England in 2025 that had visible lesions of TB and/or M. bovis-positive PCR or culture results, by reactor type (IFN-γ test positives, ST and SEV interpretation reactors to the skin test) and risk area. Dark blue bars labelled with the percentage of reactors that had visible lesions of TB (VL) and/or positive confirmatory test (PCR or culture) results. ST = standard interpretation SICCT test, SEV = severe interpretation SICCT test. Not all animals underwent confirmatory laboratory testing. Absence of visible lesions or laboratory confirmation does not establish absence of M. bovis infection in an individual animal.

3.4 Herd incidence rate

3.4.1 Temporal variation in herd incidence rate within risk areas

The annual herd incidence rate measures the number of new TB incidents detected over the 12-month reporting period of interest (2025) in herds at risk of TB infection, divided by their aggregated time at risk of infection (new cases per 100 herd-years at risk (HYR)). Herds contributed time at risk if they were at risk of a new TB incident, namely: they were active (had cattle), were not under TB movement restrictions and received a TB test in the reporting year. All incidence rates in this report are presented as the number of new TB incidents per 100 HYR. Further information on the calculation of incidence rates can be found in the explanatory supplement for the annual reports 2025.

Overall, the herd incidence rate of TB in England decreased significantly by 9% in 2025, from 7.6 in 2024 to 6.9 incidents per 100 HYR in 2025 (IRR=0.92, p=0.003). The level and trend in herd TB incidence rate varied between risk areas in England (Figure 3.4.1).

The herd incidence rate in the HRA in 2025 was 12.0 incidents per 100 HYR, a statistically significant 12% reduction compared to 2024 (13.6, IRR=0.89, p<0.001). This continued the overall downward trend observed since 2017.

In the Edge Area overall (including the annual and 6-monthly testing regions), a non-statistically significant decrease from 7.2 to 6.8 (IRR=0.94, p=0.396) was observed in 2025, continuing the overall decrease observed since 2020. Prior to this, the trend had been increasing between 2016 and 2020 (6.5 and 10.0 incidents per 100 HYR, respectively).

In the 6-monthly surveillance testing part of the Edge Area, a decreasing trend has been observed, following a peak of 16.5 incidents per 100 HYR in 2019 (12.6 in 2018), due to the introduction of 6-monthly testing in 2018. There was a non-statistically significant decrease in 2025 compared to 2024 (8.9 versus 9.7 incidents per 100 HYR, respectively: IRR=0.92, p=0.359).

Within the annual surveillance testing part of the Edge Area, the herd incidence rate varied between 4 and 6 incidents per 100 HYR over the 10-year period 2016 to 2025. The rate increased from 4.2 incidents per 100 HYR in 2016 to 6.1 in 2020, then dropped to 5.1 in 2024. There was a non-significant drop in 2025 (to 4.9 incidents per 100 HYR) compared to 2024 (IRR=0.96, p=0.690).

The herd incidence rate in the LRA remained stable over the 10-year period of interest, ranging from 0.8 to 1.1. There was a non-significant decrease in 2025 (0.9 in 2025 compared to 1.0 in 2024, IRR=0.92, p=0.511). There was no change in the OTF-W herd incidence rate in the LRA (0.30 in both 2024 and 2025).

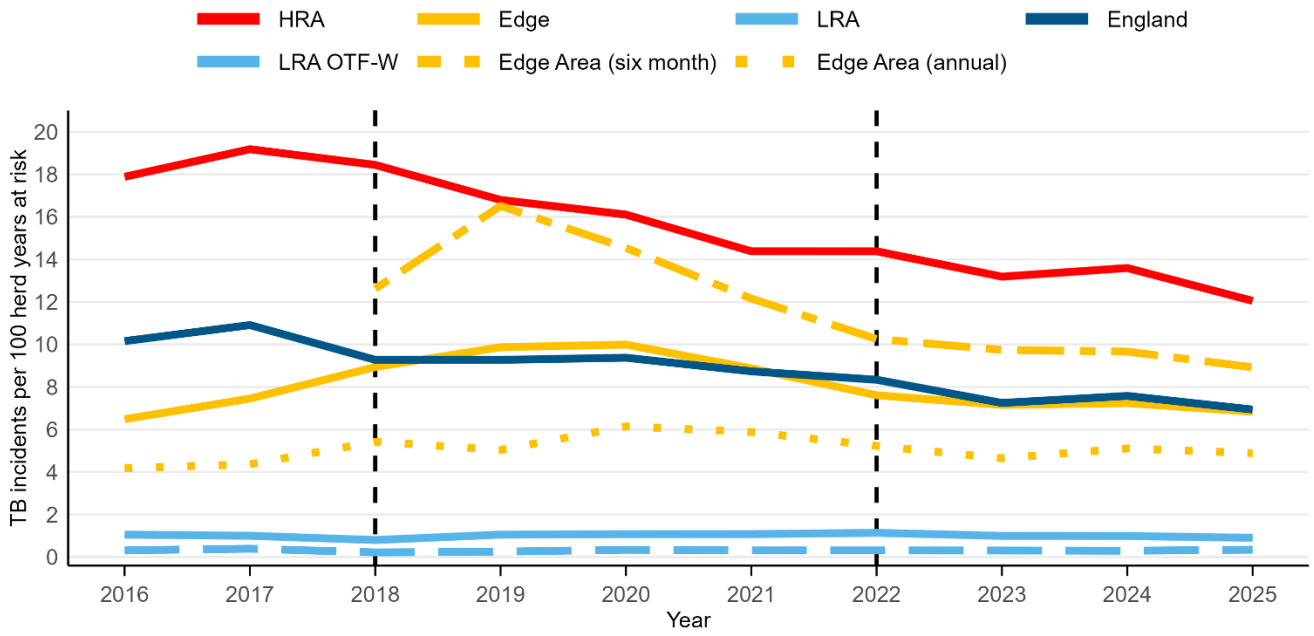


Figure 3.4.1 Annual herd incidence rate (per 100 herd years at risk) for England and by risk area, including OTF-W herd incidence rate for the LRA and separate 6-monthly and annual surveillance testing portions of the Edge area, between 2016 and 2025.

Figure 3.4.1 description: A line graph displaying the annual herd incidence rate for England and by risk area, from 2016 to 2025. Annual rates are presented separately for the 6-monthly and annual testing portions of the Edge Area (according to parish testing status in 2025) from 2018 onwards, and for total and OTF-W new incidents detected in the LRA. The vertical dashed line at 2018 represents the year in which counties straddling the HRA and Edge Area were moved fully into Edge Area and subjected to 6-monthly routine testing and the vertical dashed line at 2022 represents when all HRA counties finally and effectively transitioned from default annual to six-monthly TB surveillance testing frequency.

3.4.2 Spatial variation in herd incidence rate within risk areas

The herd incidence rate of TB varied between and within risk areas, with some Edge Area counties having a higher incidence rate than counties in the HRA (Figure 3.4.2). The highest incidence rate in 2025 was observed in Oxfordshire (18.94 per 100 HYR) and Avon (17.61 per 100 HYR), in the Edge Area and HRA, respectively. Both counties saw an increase in incidence rate compared to 2024 (17.24 and 17.28 in Oxfordshire and Avon, respectively). The lowest incidence rate (except for those counties with no incidents in 2025) was in Norfolk in the LRA (0.17 per 100 HYR).

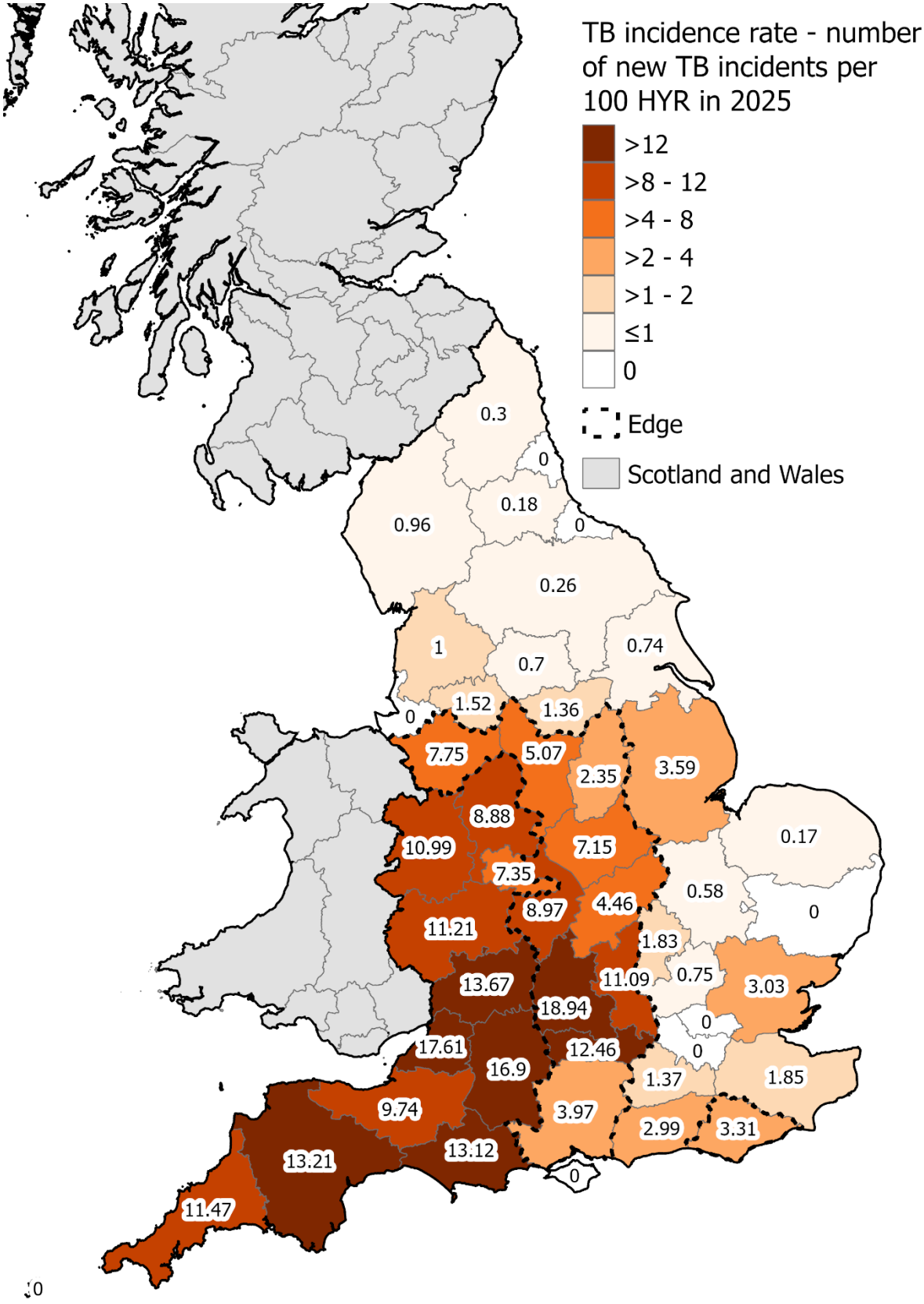

TB incidence rate - number of new TB incidents per 100 HYR in 2025
>12
>8 - 12
>4 - 8
>2 - 4
>1 - 2
≤1
0
Edge
Scotland and Wales
0.3
0
0.18
0.96
0
0.26
1
0.7
0.74
0
1.52
1.36
7.75
5.07
2.35
3.59
8.88
0.17
10.99
7.15
7.35
0.58
0
8.97
4.46
11.21
1.83
13.67
11.09
0.75
3.03
18.94
0
17.61
12.46
0
16.9
1.37
1.85
9.74
3.97
2.99
3.31
13.21
13.12
0
11.47

Figure 3.4.2 County herd incidence rate (all new TB incidents per 100 HYR) in England in 2025.

Figure 3.4.2 description: Map of England showing the herd incidence rate for each county, with the colour of the county based on the incidence rate within. There continues to be wide variation in incidence rates by county and risk area, ranging from 0.00 in areas such as Greater London, to 18.94 incidents per 100 HYR in Oxfordshire.

The highest cattle and herd densities in 2025, as in previous years, were primarily in the HRA and parts of the Edge Area (Figure 3.4.3a). The lowest densities were found in the eastern portion of the LRA. Herd size and local density are closely associated with the risk of a particular herd becoming infected with TB. These factors make a strong contribution to the spatial pattern of the TB epidemic in England (Figures 3.4.3a and b), as demonstrated by the similar patterns of darker areas for both herd density and herd level incidence. However, cattle demographics alone do not explain the geographic distribution of TB, as there are high cattle and herd densities in parts of Northern England where TB incidence is low.

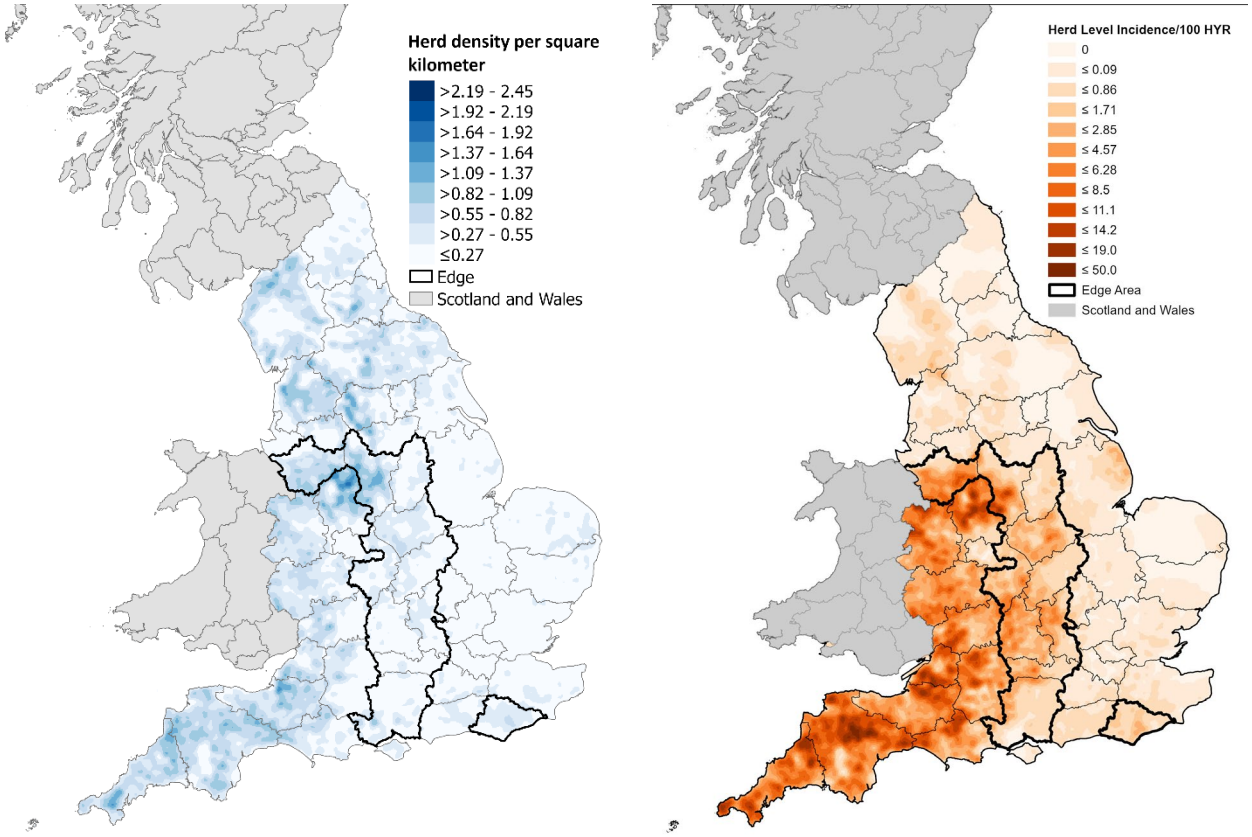


Figure 3.4.3 (a) Herd density and **(b)** herd-level incidence rate of TB in England in 2025.

Figure 3.4.3a and b description: Two maps of England, showing the cattle herd density per square kilometre on the left, and a kernel density map of the herd incidence rate per 100 HYR on the right. Herd density is measured as the number of herds per square kilometre, herd incidence is the average incidence per 100 herd years at risk in the 100 closest herds to each herd location, which 'smooths' the effect of administrative boundaries.

The highest county-level incidence rates in the HRA in 2025 were observed in Avon (17.6), Wiltshire (16.9) and Gloucestershire (13.7), and the lowest in the West Midlands (7.3) and Staffordshire (8.9).

The TB herd incidence rate decreased in 2025 compared to 2024 in 7 of the 11 HRA counties. However, this decrease was only statistically significant in Devon (15.8 in 2024 versus 13.2 in 2025, IRR=0.84, p=0.006) and Shropshire (14.7 in 2024 versus 11.0 in 2025, IRR=0.75, p=0.008). The TB incidence rate in Gloucestershire decreased from 17.3 in 2024 to 13.7 in 2025, however this decrease was not statistically significant (p=0.088). The TB incidence rate fell for the fourth consecutive year in Hereford and Worcester (17.6 in 2021 versus 11.2 in 2025) and for the third consecutive year in Cornwall (14.5 in 2021 versus 11.5 in 2025) (Figure 3.4.4).

By contrast, the TB incidence rate increased in 2025 compared to 2024 in Avon, Wiltshire, Dorset and the West Midlands, although none of those rises were statistically significant.

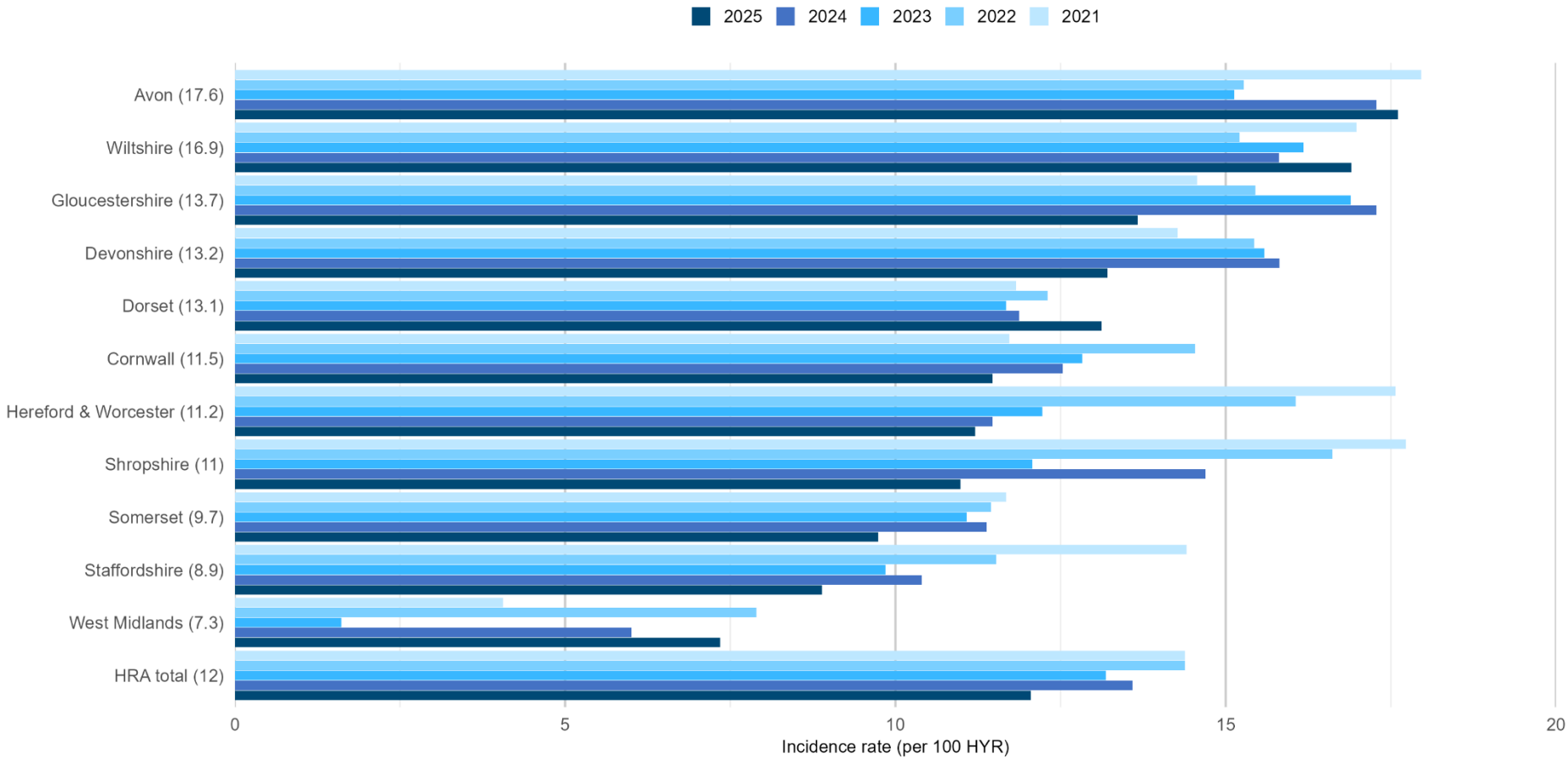


Figure 3.4.4 Annual herd incidence rate of TB (new TB incidents per 100 HYR) for the HRA overall and each HRA county, between 2021 and 2025. Counties are ranked by decreasing order of incidence rate in 2025 (given in parentheses next to county names).

In the Edge Area, the highest county-level herd incidence rates in 2025 were recorded in Oxfordshire (18.9), Berkshire (12.5) and Buckinghamshire (11.1), and the lowest in Nottinghamshire (2.4), East Sussex (3.3) and Hampshire (4.0) (Figure 3.4.5). The incidence rate in Oxfordshire was the highest reported in England in 2025, including the HRA.

The herd TB incidence rate fell in 2025 compared to 2024 in 7 of the 11 Edge Area counties. However, none of these decreases were statistically significant. Incidence rate decreased for the fourth consecutive year in Warwickshire (13.1 in 2021 versus 9.0 in 2025), Cheshire (12.6 in 2021 versus 7.8 in 2025) and Nottinghamshire (5.3 in 2021 versus 2.4 in 2025).

By contrast, the herd TB incidence rate increased in 2025 compared to 2024 in Buckinghamshire, Oxfordshire, Leicestershire and East Sussex, although none of those rises were statistically significant. The largest increases were observed in Oxfordshire (17.2 in 2024 versus 18.9 in 2025) and Leicestershire (5.6 in 2024 versus 7.1 in 2025).

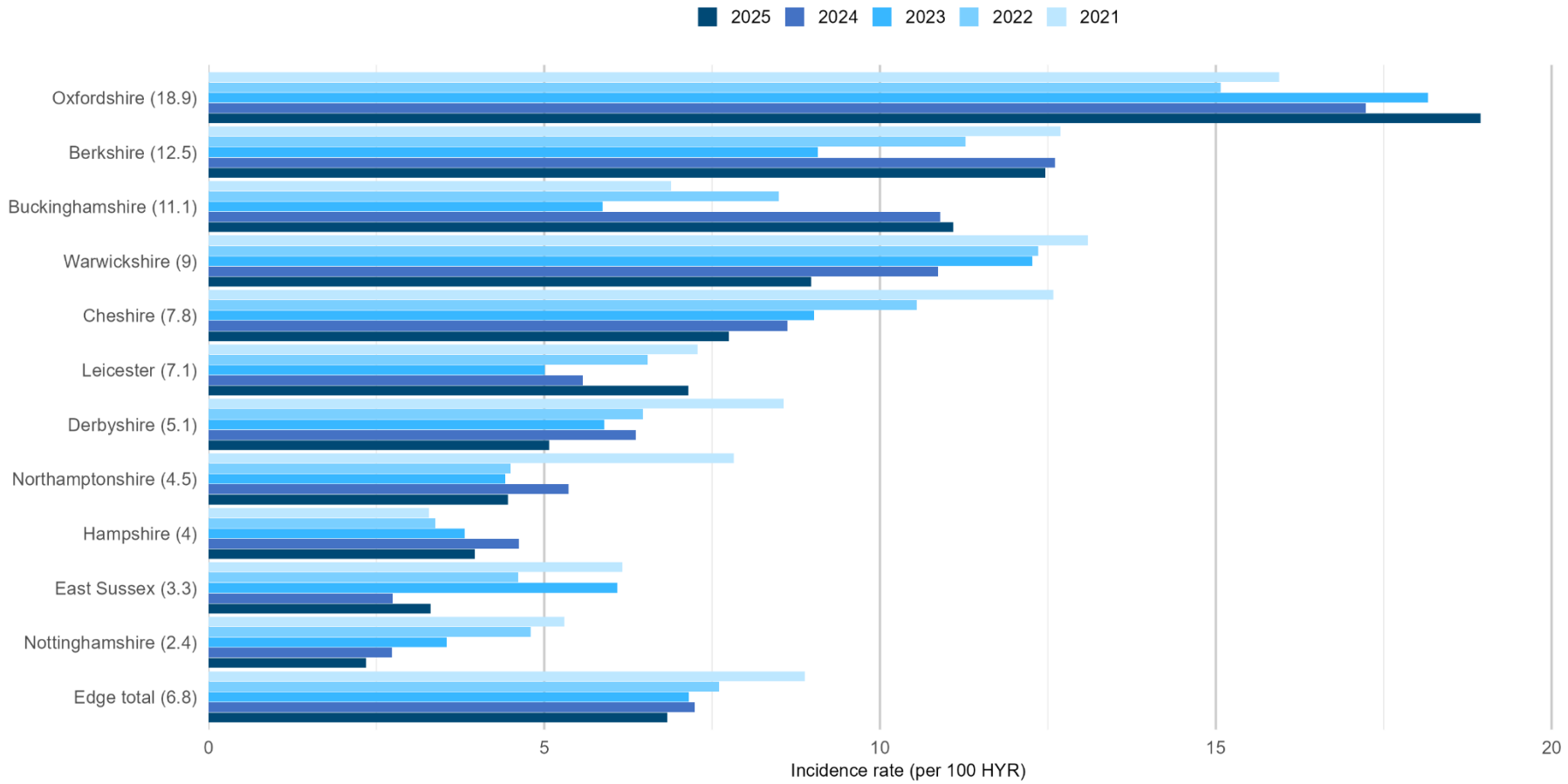


Figure 3.4.5 Annual herd incidence rate of TB (new TB incidents per 100 HYR) for the Edge Area overall and each Edge Area county, between 2021 and 2025. Counties are ranked by decreasing order of incidence rate in 2025 (given in parentheses next to county names).

In the LRA, the highest county-level incidence rates in 2025 were recorded in Lincolnshire (3.6) and the South East region of the LRA (1.2), whereas the lowest rates were in the North East region of the LRA (0.2) and Yorkshire and Humberside (0.5) (Figure 3.4.6).

The TB incidence rate decreased in 2025 compared to 2024 in Cumbria (1.4 in 2024 versus 1.0 in 2025), Yorkshire and Humberside (0.6 in 2024 versus 0.5 in 2025) and the North East region of the LRA (0.6 in 2024 versus 0.2 in 2025), although none of these decreases were statistically significant. The incidence rate remained stable in the North West region of the LRA (1.1 in both 2024 and 2025).

By contrast, the TB incidence rate increased in 2025 compared to 2024 in Lincolnshire (3.1 in 2024 versus 3.6 in 2025) and the South East region of the LRA (0.8 in 2024 versus 1.2 in 2025). Neither of these increases were statistically significant.

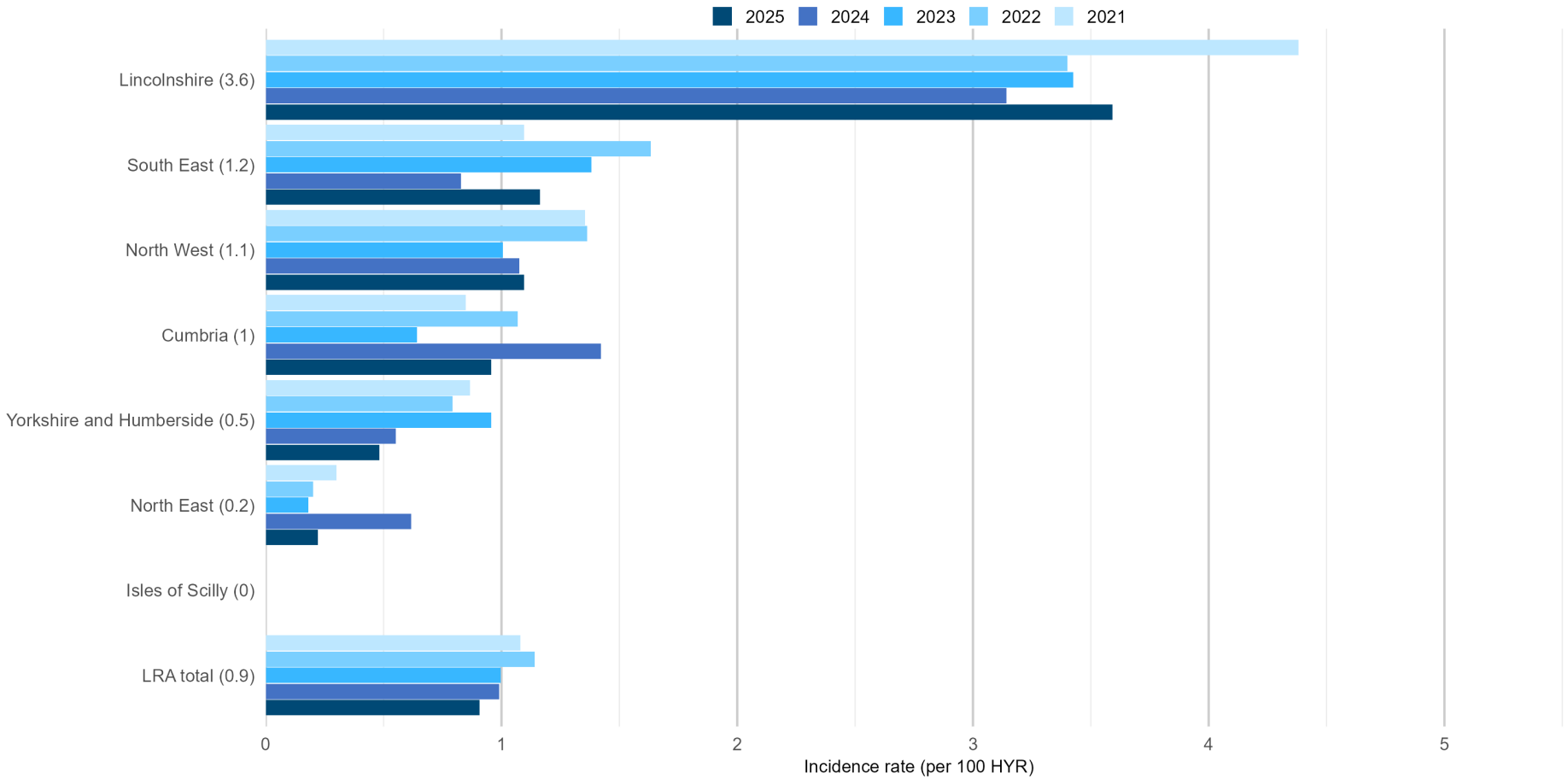


Figure 3.4.6 Annual herd incidence rate of TB (new TB incidents per 100 HYR) for the LRA overall and each LRA county and region, between 2021 and 2025. Counties and sub-regions are ranked by decreasing order of incidence rate in 2025 (given in parentheses).

3.5 Herd prevalence

During 2025, an average of 3.1% of active cattle herds in England (1,336 herds) were under movement restrictions each month due to a TB incident, compared to 3.8% in 2024 (1678 herds) (Figure 3.5.1). However, this overall figure masks substantial differences between risk areas and seasonal herd prevalence cycles, which are likely related to the time of year when most TB surveillance testing is undertaken in OTF herds in GB (October to April).

Average monthly herd prevalence in the HRA continued the decreasing trend that started in 2018 and reached 6.8% in 2025 (7.2% in 2024), the lowest level recorded in the last 10 years.

In the Edge Area overall, average monthly herd prevalence rose steadily from 2016 (3.6%) and peaked at 6.3% between 2018 and 2019. Since then, it has fluctuated but showed an overall decrease, plateauing at around 4.0% between 2022 and 2025. The 6-monthly testing part of the Edge Area followed a similar trend to the Edge Area overall, decreasing from a peak of 9.5% (2019) to 5.0% since 2023. Conversely, in the annual testing part of the Edge Area, average monthly herd prevalence has remained more stable, increasing slightly from 2.1% in 2016 to 3.3% in 2021. Since then, it has plateaued at around 3.0% between 2022 and 2025.

In the LRA, average monthly prevalence has remained consistently low (not exceeding 0.5%) for the past 10 years.

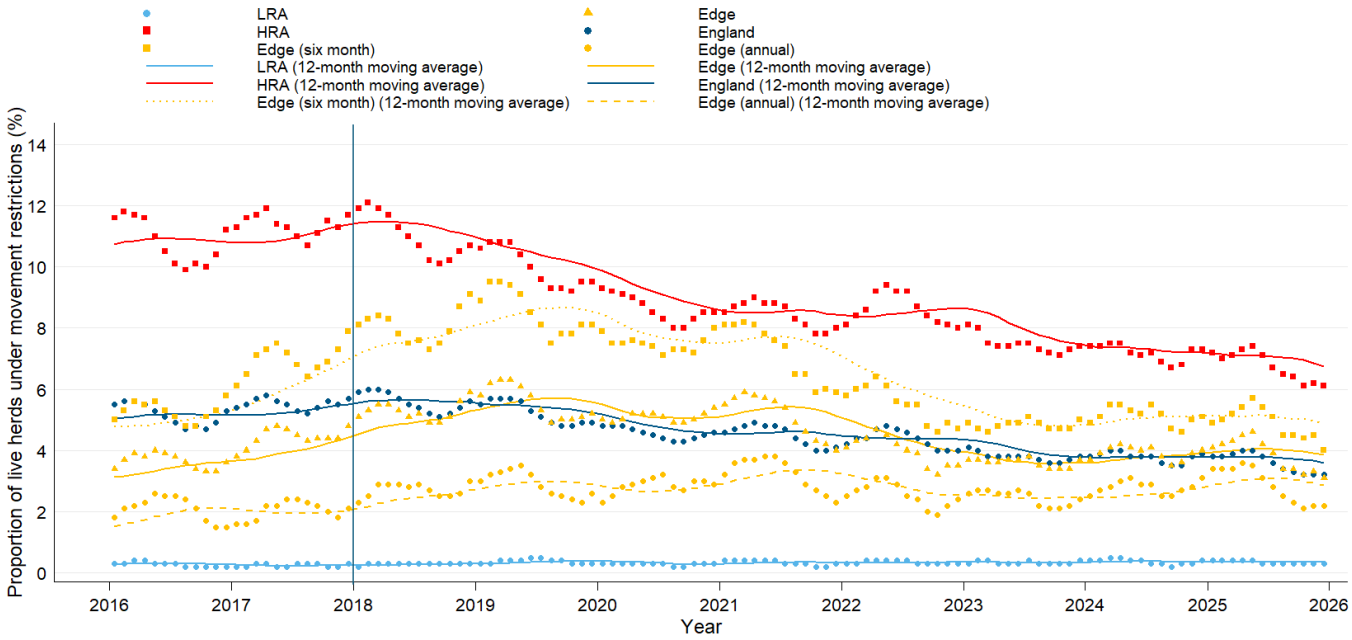


Figure 3.5.1 Monthly percentage of active cattle herds in England under movement restrictions as a result of any TB incident (herd prevalence), by risk area, between January 2016 and December 2025.

Figure 3.5.1 description: Line chart displaying the 12-month moving average of herd prevalence (lines) and the monthly herd prevalence (dots) from 2016 to 2025 for the HRA, Edge Area (overall), 6-monthly and annual testing sections of Edge Area, LRA, and England overall. The separation of 6-monthly and annual testing portions of the Edge Area (according to parish testing status in 2025) applied from 2018 onwards. The vertical line represents the year in which counties straddling the HRA and Edge Area were moved fully into Edge Area, and a portion of the redefined Edge Area was placed on 6-monthly routine surveillance testing. Monthly herd prevalence was calculated by dividing the number of active herds under restriction due to a TB incident (of any type) at the mid-point of each month, by the total number of active cattle herds in each area on the same day. The 12-month moving average is the average of the values for the current month and the previous 11 months.

End-of-year herd prevalence is the proportion of herds under movement restrictions on 31 December due to an ongoing TB incident of any type. In 2025, the end of year prevalence in England was 3.1%, a slight decrease compared to 2024 (3.8%). In the HRA, the end of year TB prevalence in 2025 was 5.9%, a statistically significant drop compared to 2024 (7.2%, $p<0.001$) that represented the eighth consecutive year of decline (Figure 3.5.2).

At the county level, Wiltshire had the highest end of year prevalence of all HRA counties in 2025 (9.9%), whereas the lowest prevalence was seen in the West

Midlands (2.7%) (Figure 3.5.2). In line with the overall trend in the HRA, the end of year prevalence decreased from 2024 to 2025 in 9 HRA counties.

For most counties, the end of year prevalence has fluctuated since 2021. However, it decreased for the fourth consecutive year in Staffordshire (8.2% in 2021 versus 3.9% in 2025) and for the third consecutive year in Cornwall (8.4% in 2022 versus 5.4% in 2025).

Statistically significant decreases in end of year prevalence relative to 2024 were recorded in Gloucestershire (8.6% in 2024 versus 5.7% in 2025, p=0.016), Shropshire (7.8% in 2024 versus 5.4% in 2025, p=0.005), Devon (8.4% in 2024 versus 6.6% in 2025, p=0.002) and Somerset (6.0% in 2024 versus 4.6% in 2025, p=0.042).

Non-statistically significant increases in end of year prevalence in 2025 relative to 2024 were observed in Hereford and Worcester (5.6% in 2024 versus 6.0% in 2025) and Wiltshire (9.6% in 2024 versus to 9.9% in 2025).

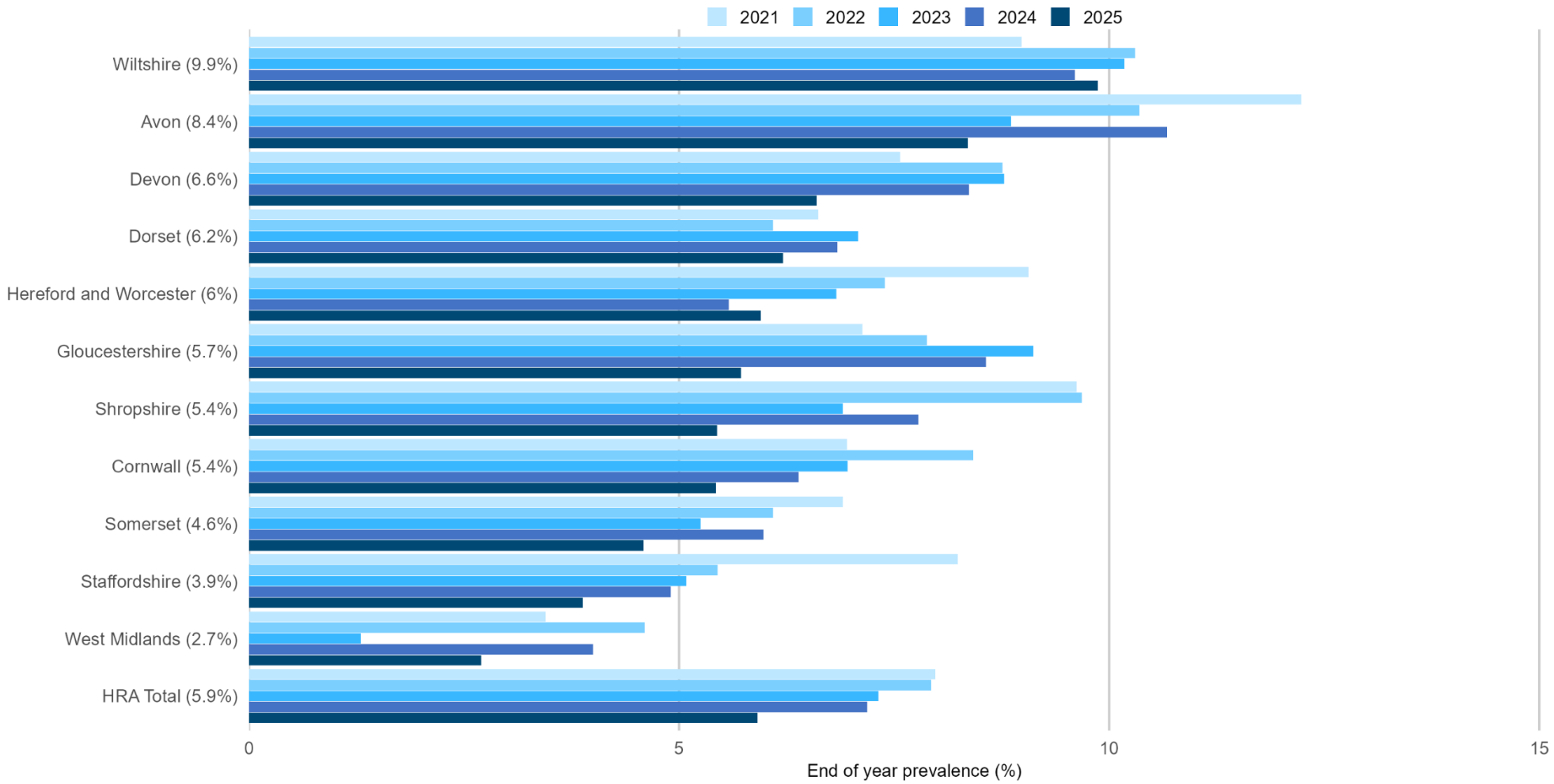


Figure 3.5.2 End of year herd TB prevalence for the HRA overall and for each HRA county, between 2021 and 2025. Counties are ranked by decreasing order of prevalence in 2025 (given in parentheses next to county names)

In the Edge Area, the end of year TB herd prevalence in 2025 was 3.1%, a statistically significant reduction compared to 2024 (4.0%, $p<0.001$) following 2 consecutive years of increase, 2022 (3.5%), 2023 (3.7%) and 2024 (4.0%) (Figure 3.5.3).

Oxfordshire had the highest end of year herd prevalence of all Edge Area counties in 2025 (9.7%) and the second highest in England (after Wiltshire in the HRA). The lowest prevalence was recorded in East Sussex (0.9%) (Figure 3.5.3).

Most Edge Area counties have seen fluctuations in end of year herd prevalence since 2021. However, Hampshire experienced an increase for the fourth consecutive year (1.4% in 2021 versus 2.5% in 2025). The end of year herd prevalence in 2025 relative to 2024 increased non-significantly in Oxfordshire and Hampshire, whereas the other 9 Edge Area counties recorded reductions. The largest decreases were observed in Buckinghamshire (7.5% in 2024 versus 4.8% in 2025), Berkshire (8.8% in 2024 versus 7.0% in 2025) and Warwickshire (5.8% in 2024 versus 4.2% in 2025), although none were statistically significant. Cheshire recorded a statistically significant fall in the end of year prevalence relative to 2024 (3.8% in 2024 versus 2.5% in 2025, $p=0.050$).

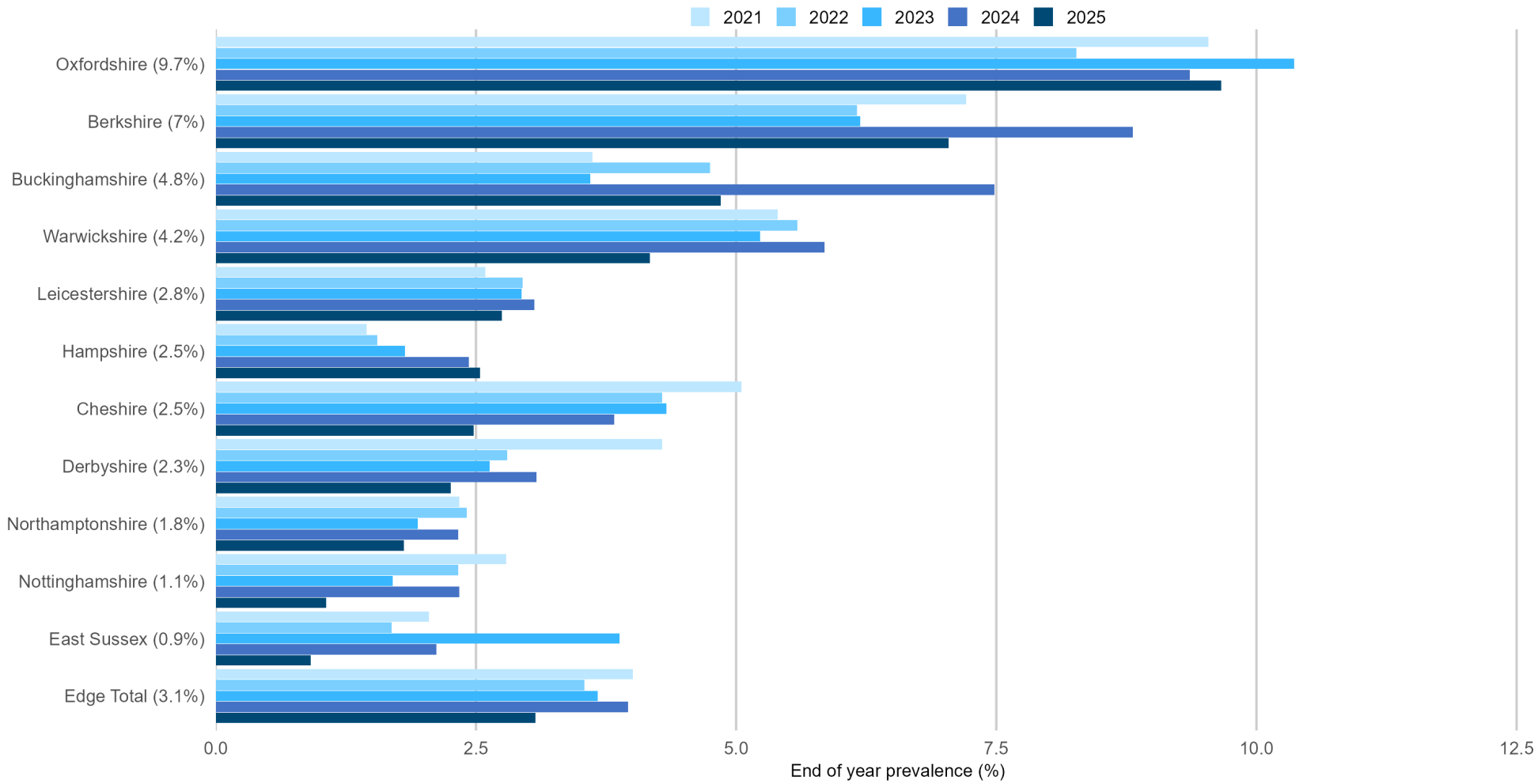


Figure 3.5.3 End of year TB herd prevalence for the Edge Area overall and for each Edge Area county, between 2021 and 2025. Counties are ranked by decreasing order of prevalence in 2025 (given in parentheses next to county names).

In the LRA, the end of year herd TB prevalence in 2025 remained low at 0.3%, similar to 2024 (0.4%) and the same as 2023 (0.3%) (Figure 3.5.4).

At the county and region level, Lincolnshire had the highest end of year prevalence in the LRA in 2025 (2.2%), whereas the lowest prevalence was seen in the Isles of Scilly (0.0%) and the North East (0.0%) (Figure 3.5.4). End of year herd prevalence declined from 2024 to 2025 in 6 LRA counties and sub-regions, although none of these decreases were statistically significant. The largest decreases were observed in Cumbria (0.6% in 2024 versus 0.4% in 2025) and the North West of the LRA (0.3% in 2024 versus 0.1% in 2025).

End of year herd prevalence, relative to 2024, increased slightly and non-significantly in Lincolnshire (2.1% in 2024 versus 2.2% in 2025) for a second consecutive year, following 2 annual drops in 2022 and 2023.

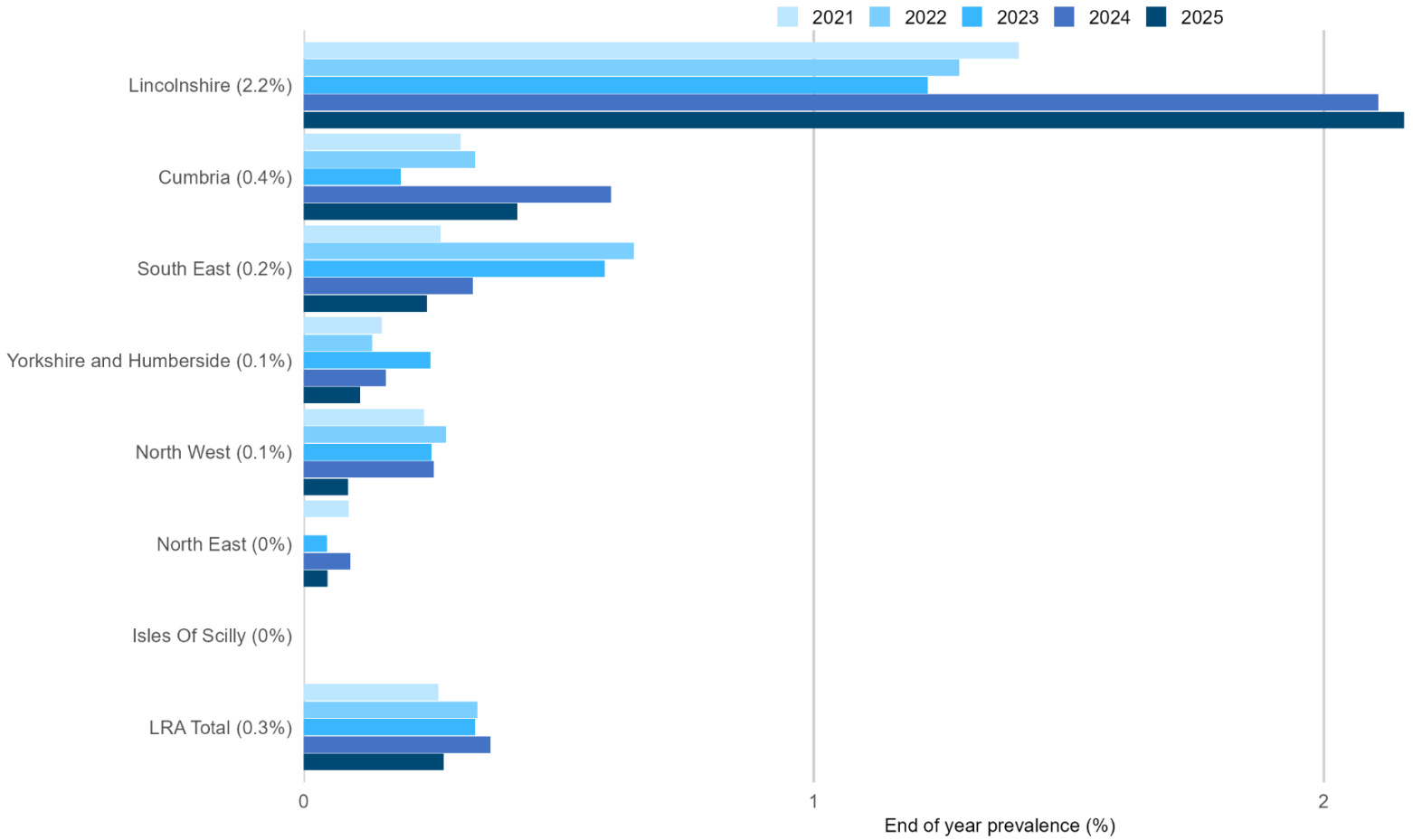


Figure 3.5.4 End of year TB herd prevalence for the LRA overall and for each LRA county or region, between 2021 and 2025. Counties and regions of the LRA are ranked by decreasing order of prevalence in 2025 (given in parentheses next to county and sub-region names).

3.6 Duration of TB herd incidents

A total of 2,466 TB incidents were resolved in England in 2025. Of these, 1,870 were in the HRA, 477 in the Edge Area and 119 in the LRA.

In England, the median duration of all TB incidents that ended in 2025 was 188 days, the same as in 2024. The median duration in the HRA was slightly higher than for England overall at 189 days (190 days in 2024). In the Edge Area, median duration was higher than England overall and increased in 2025 compared to 2024 (186 days in 2024 versus 194 days in 2025). Median duration of TB incidents increased slightly in the LRA in 2025 (160 days) compared to 2024 (155 days).

Since 2016, TB incident herds with more than one reactor have consistently been under movement restrictions for longer than those with only one reactor, across all risk areas (Figure 3.6.1).

TB incidents with more than one reactor, which ended in 2025, had a median duration of 228 days in the Edge Area (the highest recorded median duration), followed by 222 days in HRA and 221 days in the LRA.
In the HRA, that median duration was lower in 2025 than in 2024 (233 days) and the shortest median duration for incidents with more than one reactor in the HRA over the last 10 years.

The median duration of TB incidents with 0 to 1 reactor ending in 2025 was also highest in the Edge Area (175 days) followed by the HRA (167 days) and the LRA (134 days).

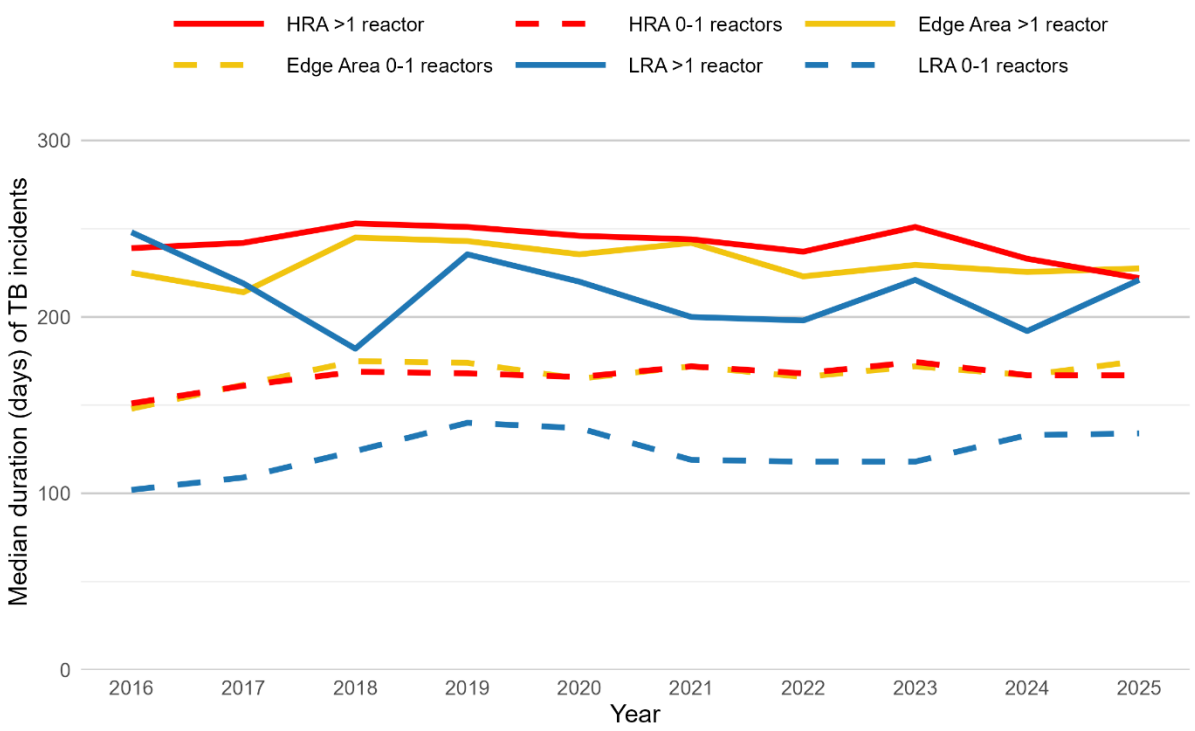


Figure 3.6.1 Median duration (in days) of TB incidents that ended in each year, between 2016 and 2025. Note: TB incidents with no reactors were those initiated by a slaughterhouse case, or by 2xIRs only and where subsequent testing of the affected herd revealed no reactors.

In the HRA, the median duration of all TB incidents (irrespective of the number of TB test reactors found) has been decreasing since 2023 (203 days). The marginal reduction observed between 2024 (190 days) and 2025 (189 days) was not statistically significant (p=0.116) (Figure 3.6.2). At a county level, median incident duration was broadly the same, between 181 days and 194 days. Most counties (9 out of 11) recorded overall decreases in median duration between 2021 and 2025.

Median duration fell in most counties (8 out of 11) of the HRA between 2024 and 2025, although none of those were statistically significant. Three counties sustained increases in median duration: Cornwall (186 days in 2024 versus 189 days in 2025), Gloucestershire (187 days in 2024 versus 193 days in 2025), and Staffordshire (186 days in 2024 versus 187 days in 2025), none of which were statistically significant (K-sample equality of medians test, p=0.467, p=0.907 and p=0.386, respectively).

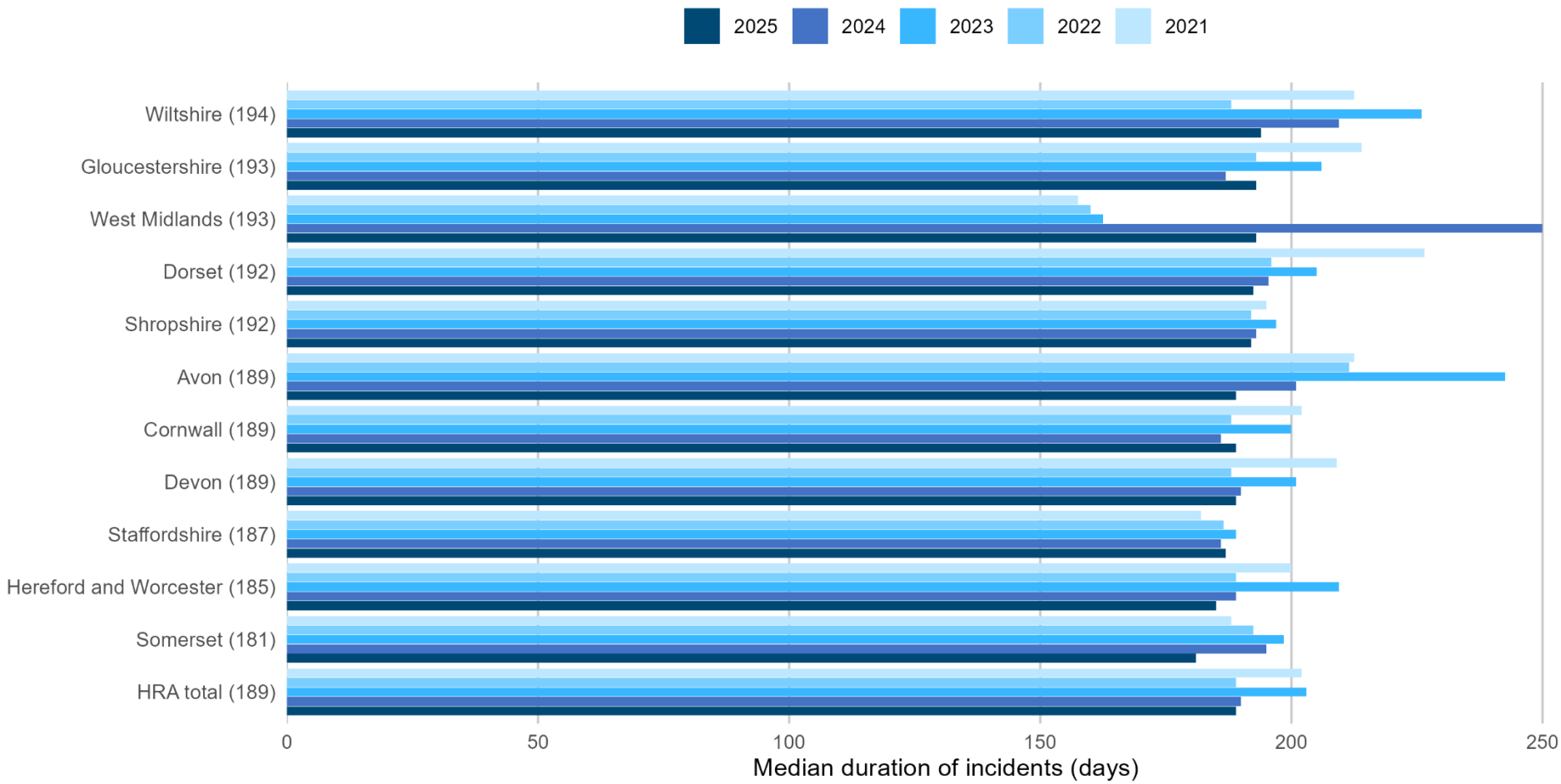


Figure 3.6.2 Median duration (in days) of all TB incidents that ended in each year between 2021 and 2025, by HRA county. Those are ranked by decreasing order of median duration in 2025 (shown in parentheses next to county names). Note: The high median duration in the West Midlands in 2024 (457 days) is truncated at 250 days and was due to only one persistent (>550 days) TB incident ending that year.

In the Edge Area, the median incident duration has fluctuated since 2021. In 2025, it increased compared to 2024, but the difference was not statistically significant (194 vs 186 days respectively, p=0.126) (Figure 3.6.3). Most counties (7 out of 11) saw overall decreases in median duration between 2021 and 2025 (the exceptions were Berkshire, Hampshire and Nottinghamshire which saw increases and East Sussex which stayed the same).

The county of the Edge Area experiencing the highest median incident duration in 2025 was Berkshire, where it increased significantly to 253 days from 167.5 days in 2024 (p=0.001). Median durations in Berkshire and Buckinghamshire in 2025 exceeded those of all the HRA counties. By contrast, Nottinghamshire (16%) and East Sussex (12%) recorded the largest reductions on 2024, although they were not statistically significant (K-sample equality of medians test, p=0.628 and p=0.874, respectively).

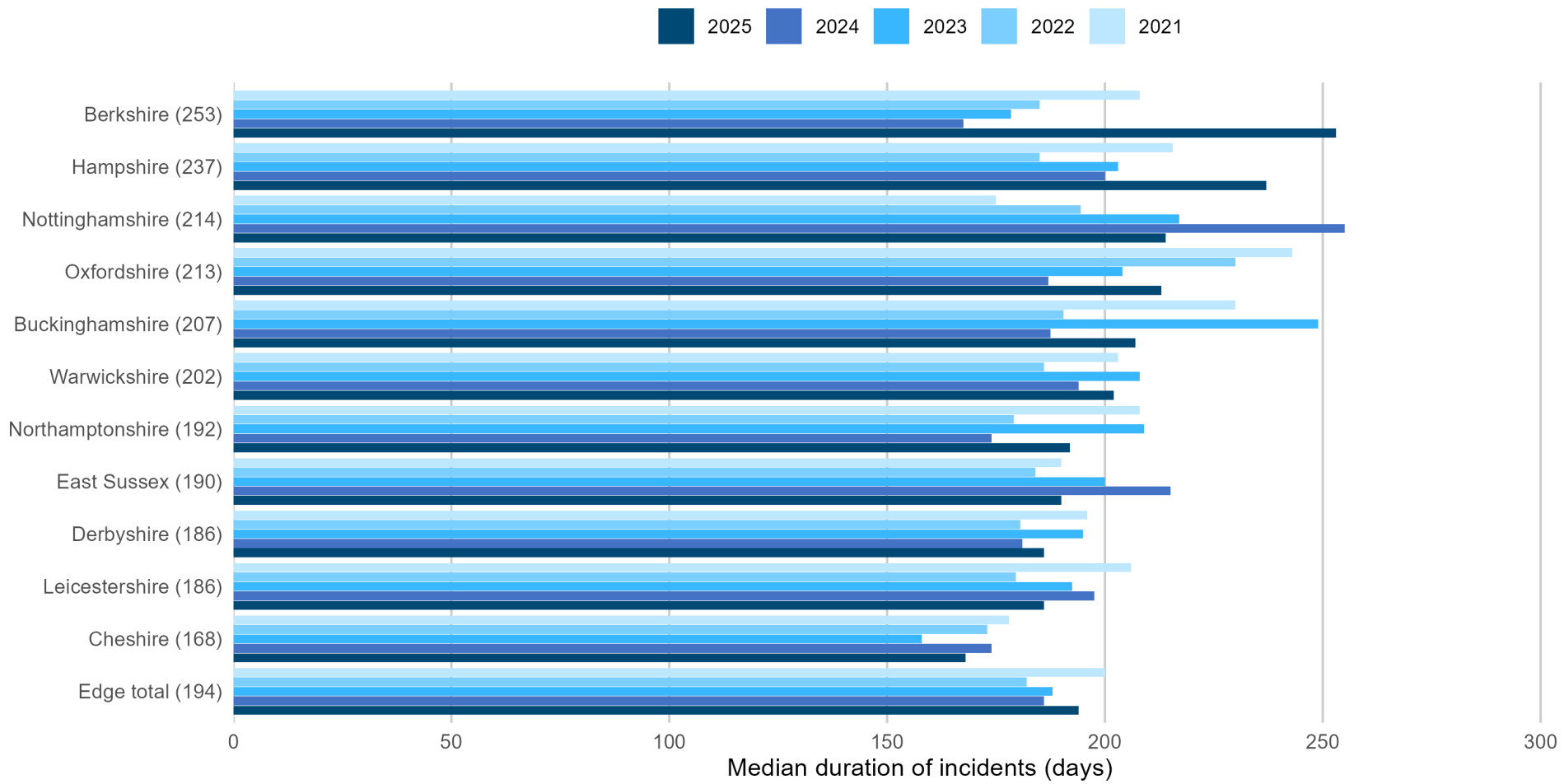


Figure 3.6.3 Median duration (in days) of all TB incidents that ended in each year between 2021 and 2025, by Edge Area county. Those are ranked by decreasing order of median duration in 2025 (shown in parentheses next to county names).

In the LRA, the median incident duration has fluctuated since 2021 and increased from 154.5 days in 2024 to 160 days in 2025 (p=0.288) (Figure 3.6.4). Only 3 of the 7 counties and regions of the LRA experienced overall decreases in median duration between 2021 and 2025.

These same counties and regions recorded non-statistically significant decreases between 2024 and 2025, Cumbria (162.5 days in 2024 versus 162 days in 2025), the North East of the LRA (112 days in 2024 versus 91 days in 2025) and Yorkshire and Humberside (171 days in 2024 versus 110.5 days in 2025). (K-sample equality of medians test, p=0.736, p=0.350 and p=0.358, respectively).

The North West (26%) and Lincolnshire (15%) sustained the largest increases in 2025 compared to 2024, but those were not statistically significant (K-sample equality of medians test, p=0.247 and p=0.312, respectively).

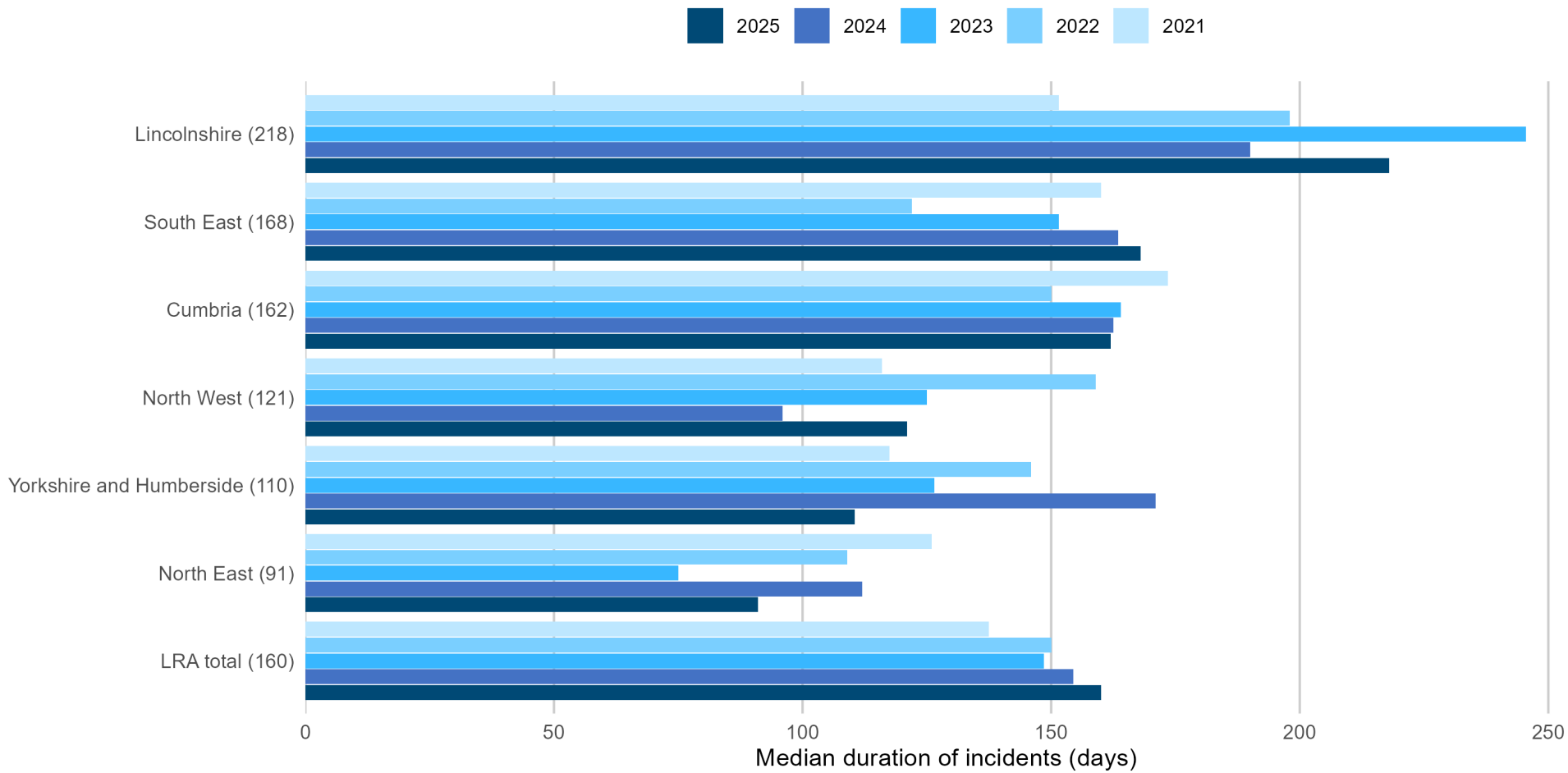


Figure 3.6.4 Median duration (in days) of all TB incidents that ended in each year between 2021 and 2025, by LRA county and regions. Those are ranked by decreasing order of median duration in 2025 (shown in parentheses next to county and region names).

3.7 Persistence

TB incidents lasting more than 550 days (about 18 months) are classified by APHA as ‘persistent’ for management and reporting purposes. Affected herds are then eligible for enhanced management procedures, based on a series of prioritisation criteria.

The number of persistent incidents still unresolved at the end of 2025 in England (90) was lower than 2024 (116, 22% decrease) and nearly half of what it was 5 years before in 2021 (n=163). This represented 7% of all TB incidents ongoing in England at the end of 2025 (90 of 1,334), the same proportion as in 2024 (116 of 1,671).

In the HRA, the number of persistent TB incidents increased by 9% between 2016 (233) and 2018 (253), before falling by 69% in 2025 (n=78). At the end of 2025, there were 15 fewer persistent TB incidents in the HRA compared to 2024 (Figure 3.7.1).

There has been more fluctuation in the number of persistent TB incidents in the Edge Area over the last 10 years, which peaked at 29 in 2019. In 2025, there was a 47% decrease in the number of persistent TB incidents compared to 2024 (17 in 2024 versus 9 in 2025) (Figure 3.7.2).

The LRA had no ongoing persistent TB incidents between 2016 and 2018. They have since increased from one between 2019 and 2022 to 2 ongoing persistent incidents in 2023 and 6 ongoing persistent incidents remaining unresolved in the LRA at the end of 2024 (Figure 3.7.3). The number of ongoing persistent TB incidents decreased in 2025 to 3. These ongoing persistent incidents were located in Lincolnshire (2 persistent incidents) and Cambridgeshire (one persistent incident).

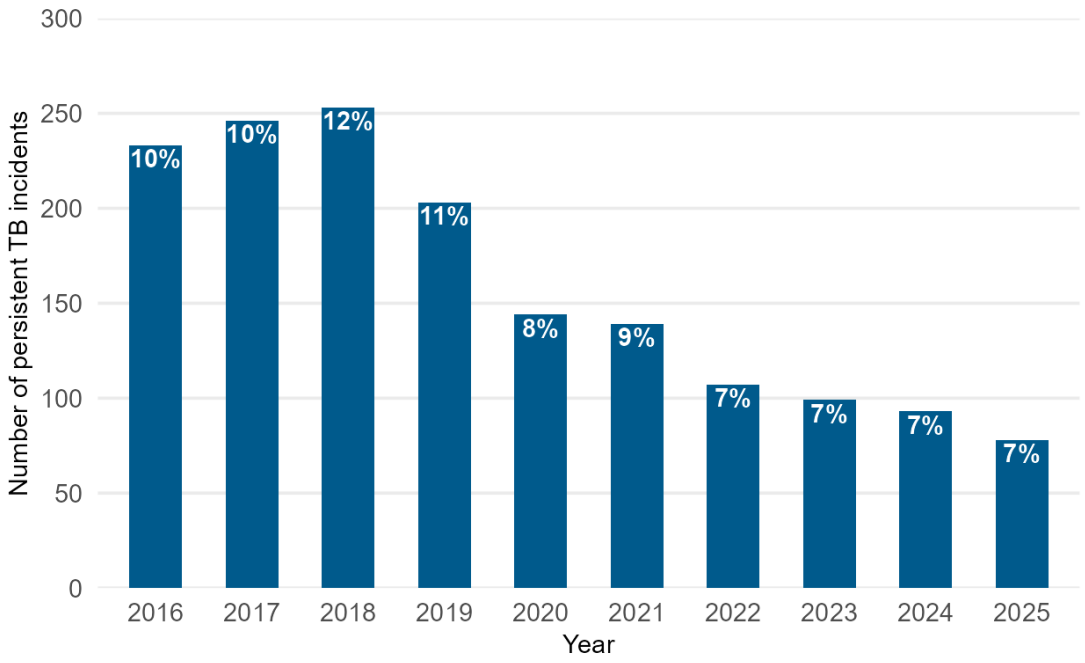


Figure 3.7.1 Number of TB incidents that had lasted more than 550 days (persistent) and were still unresolved at the end of each year in the HRA. The percentages of ongoing incidents classed as persistent at the end of each reporting year are given at the top of each column.

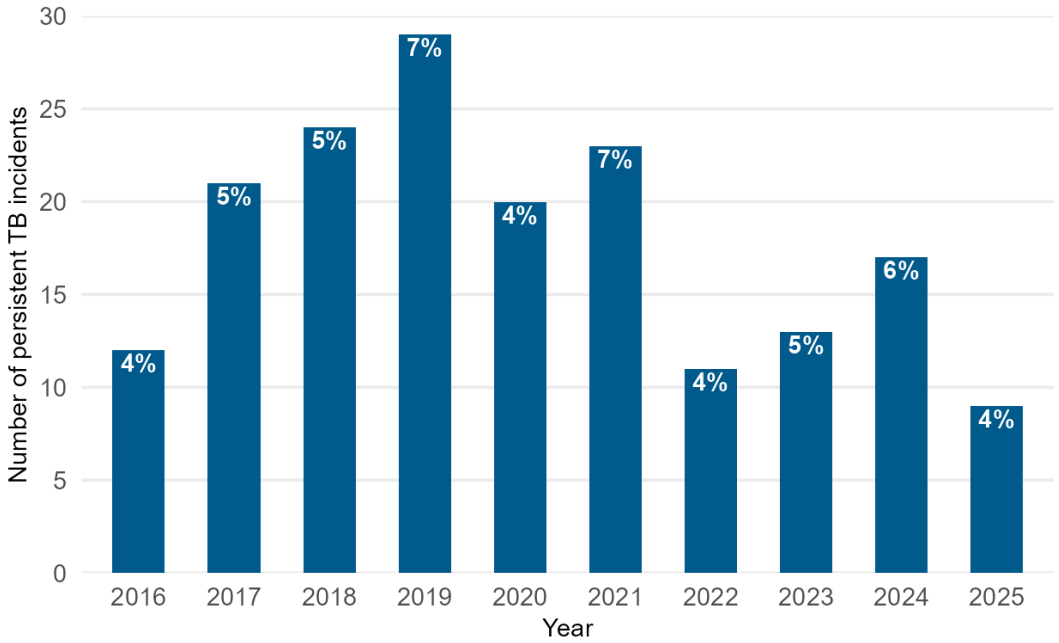


Figure 3.7.2 Number of TB incidents that had lasted more than 550 days (persistent) and were still unresolved at the end of each year in the Edge Area. The percentages of ongoing incidents classed as persistent at the end of each reporting year are given at the top of each column.

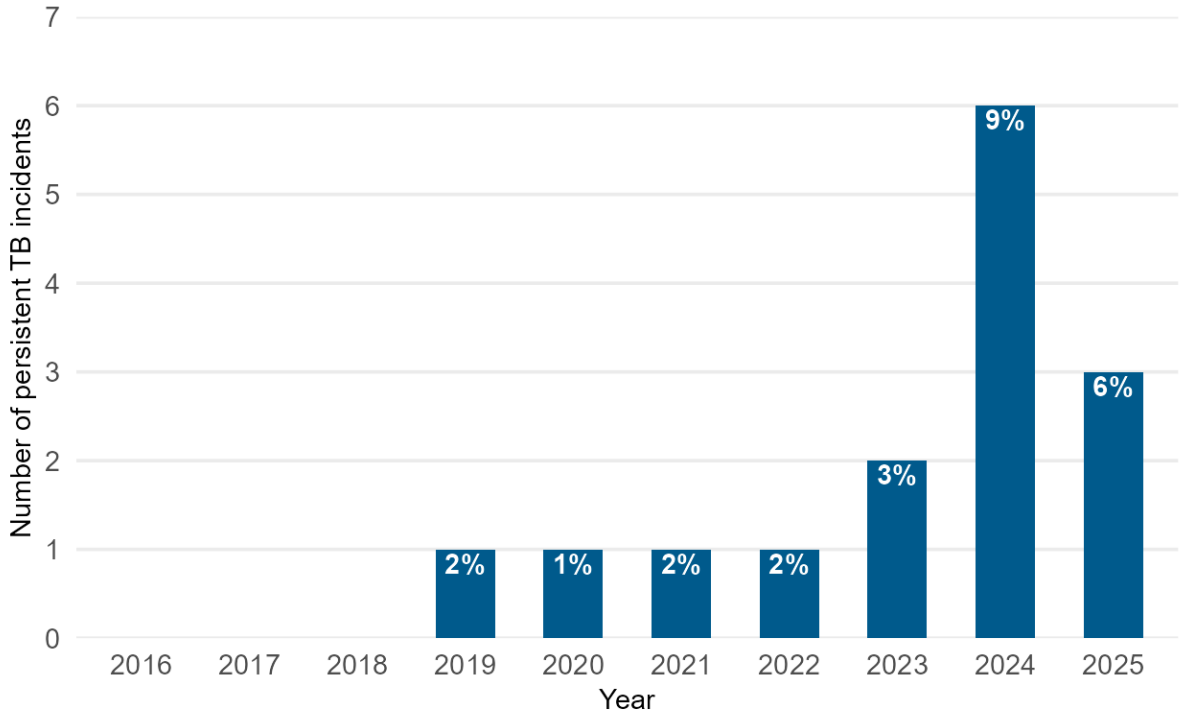


Figure 3.7.3 Number of TB incidents that had lasted more than 550 days (persistent) and were still unresolved at the end of each year in the LRA. The percentages of ongoing incidents classed as persistent at the end of each reporting year are given at the top of each column.

In the HRA overall, 78 (7%) of the 1,048 TB incidents ongoing at the end of 2025 were classed as persistent. This was the same compared to 2024 (7%). Overall, there has been a declining trend in the percentage of persistent incidents in the HRA since 2021 (9%) (Figure 3.7.4).

The HRA counties with the highest percentage of persistent TB incidents still unresolved at the end of 2025 were Wiltshire (14.4%), Devon (9.2%) and Shropshire (8.4%). The lowest percentages were recorded in the West Midlands (0%), Cornwall (3.0%), and Avon (3.6%).

Decreases in the percentage of persistent TB incidents were observed in Avon, Cornwall, Dorset, and Hereford and Worcester in 2025 compared to 2024. In Avon, the percentage dropped from 9.7% in 2024 to 3.6% in 2025. In the West Midlands, apart from 2023 where there was a single incident which remained open at the end of 2023 and was persistent, the percentage of persistent TB incidents has been 0% since 2021.

Devon, Gloucestershire, Shropshire, Somerset and Wiltshire all recorded increases in the percentage of persistent TB incidents at the end of 2025 compared with 2024. The percentage of persistent TB incidents remained the same in Staffordshire in

2025 compared to 2024. The percentage of persistent TB incidents increased for the third consecutive year in Devon.

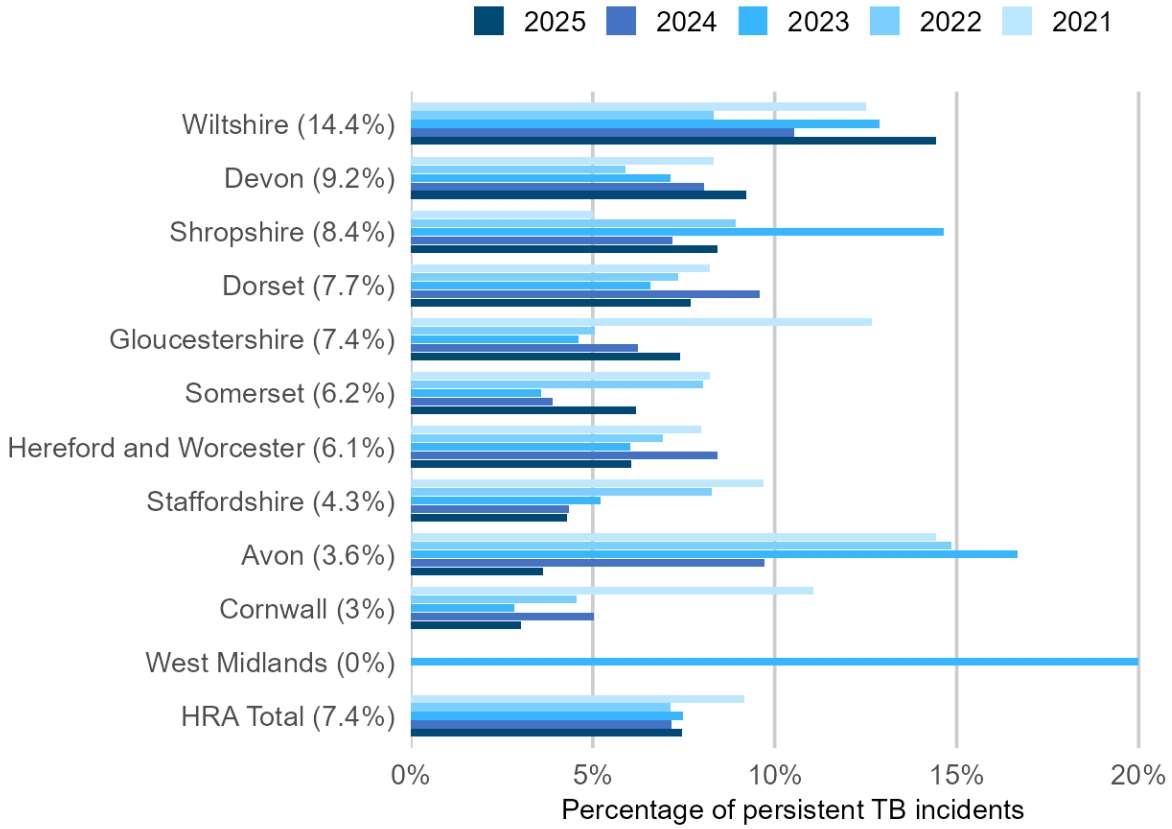


Figure 3.7.4 Percentage of all TB incidents still ongoing at the end of the year, between 2021 and 2025, that were persistent (duration over 550 days) in each county of the HRA and in the HRA overall. Counties are ranked by decreasing percentage of persistent incidents in 2025 (shown in parentheses). Note: The high percentage of persistent TB incidents in the West Midlands in 2023 (100%) is truncated at 20% and was due to a single TB incident still open at the end of the year, which was classified as persistent.

3.8 Recurrent TB incidents

3.8.1 Three-year backwards recurrence

A recurrent incident in England is defined in this report as a new TB incident (of any type, for example OTF-S or OTF-W) in a herd that had sustained another TB incident (also of any type) in the 3 years prior to the disclosing test (Figure 3.8.1). This is referred to as backward-looking recurrence. A shorter timespan was also investigated, looking at the TB history of herds within the 18 months before the disclosing test (Figure 3.8.5). Looking at 18-month recurrence can help distinguish likely short-term recurrence due to residual infection, missed infected animals, or

ongoing local transmission from longer-term recurrence that is more indicative of a new infection introduction event.

The percentage of new recurrent TB incidents starting in England in 2025 decreased slightly compared to 2024 (55% vs 56% respectively). The percentage of new recurrent TB incidents in the HRA has remained consistently high over the last 5 years with a marginal reduction observed in 2025 (60% in 2024 versus 59% in 2025).

In contrast, 3-year recurrence in the Edge Area increased from 46% in 2021 to 54% in 2023 before falling to 47% in 2024 and then 46% in 2025. Although recurrence in the LRA was much lower than in the other TB risk areas it increased from 12% in 2021 to 21% in 2023 and has since decreased to 19% in 2025 (Figure 3.8.1). Recurrence is further explored in Chapter 9.3 of this report.

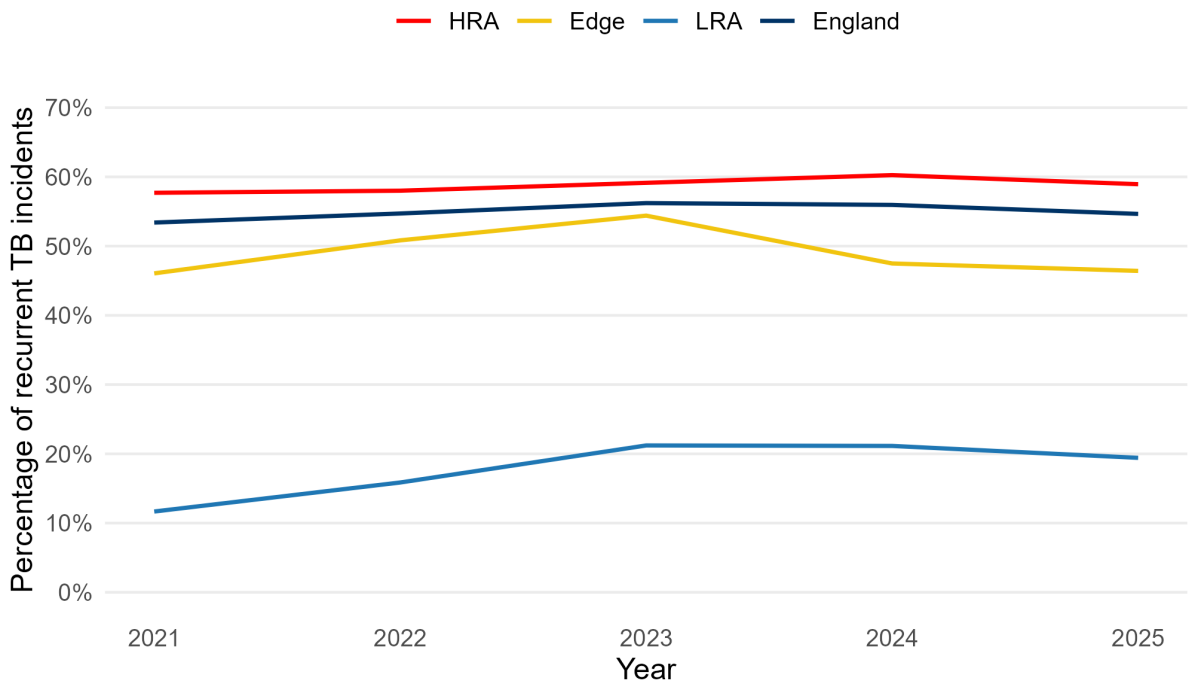


Figure 3.8.1 Annual percentage of new TB incidents that occurred in herds with a history of TB incidents of any type in the previous 3 years, by risk area, between 2021 and 2025.

As stated above, in 2025, 59% of new TB incidents were considered recurrent in the HRA, a slight decrease from 60% in 2024. The number of recurrent herd incidents decreased in the HRA in 2025 (943 herds) compared to 2024 (1,128 herds). At a county level, the percentage of recurrent incidents in 2025 was highest in Gloucestershire (64%) followed by Devon, Staffordshire and Wiltshire (all 63%) and lowest in the West Midlands and Dorset (both 50%) (Figure 3.8.2).

Five counties in the HRA saw an increase in the percentage of recurrent TB incidents in 2025 relative to 2024, which was highest in the West Midlands (absolute percentage increase 50%, from very few new incidents disclosed each year) and Devon (4%).

Six counties experienced decreases in the percentage of recurrent incidents in 2025 compared to 2024, the largest observed in Hereford and Worcester (absolute percentage decrease 11%), followed by Avon (9%) and Dorset (6%).

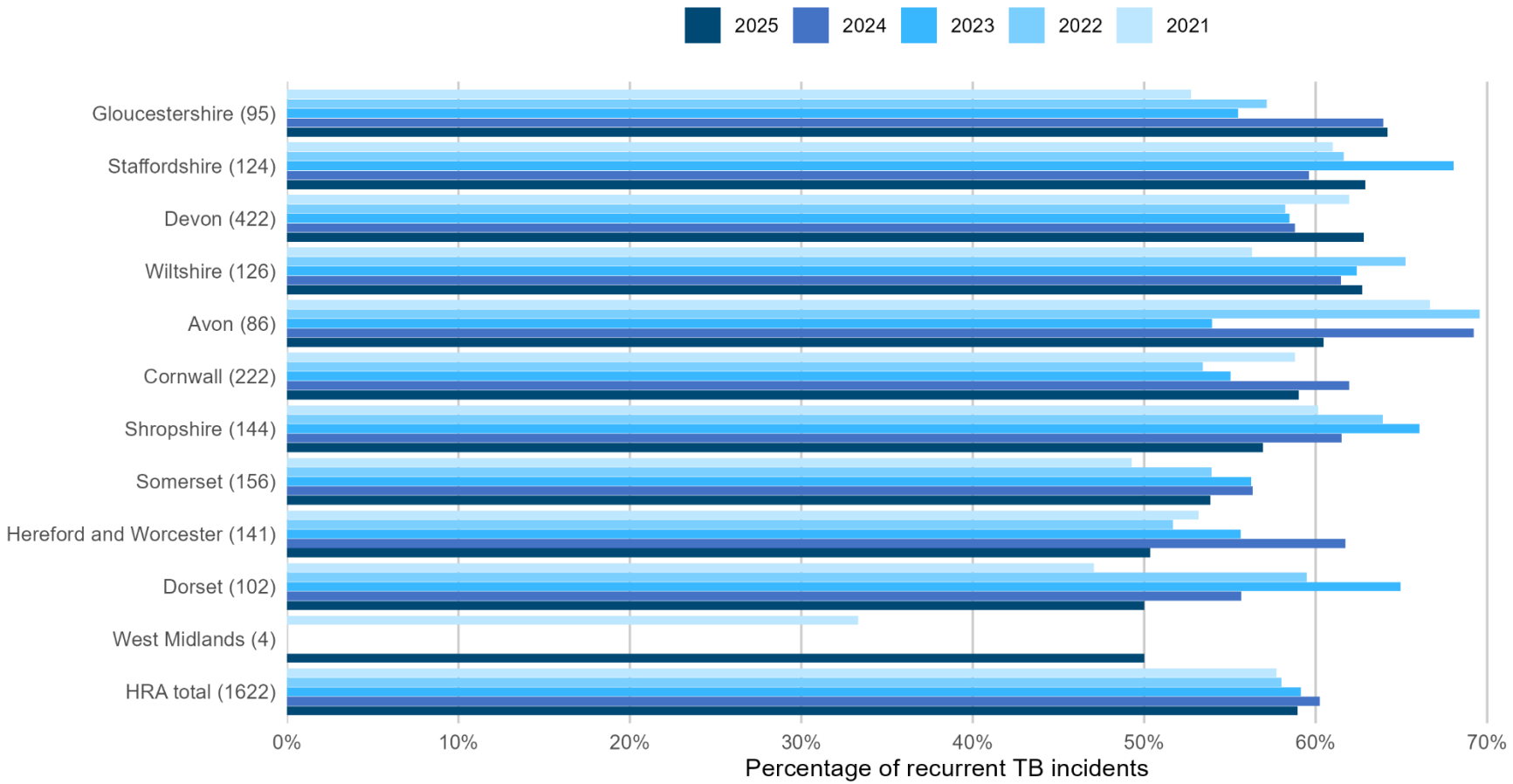


Figure 3.8.2 Annual percentage of recurrent TB incidents (new incidents in herds which had sustained a TB incident in the previous 3 years), per HRA county, between 2021 and 2025. Counties are ranked by decreasing percentage recurrent incidents in 2025 (Total TB incidents are shown in parentheses).

In 2025, 46% of new TB incidents were considered recurrent in the Edge Area, a slight decrease compared to 2024 (47%). The number of recurrent herds in 2025 (188 herds) also decreased compared to 2024 (217 herds).

At a county level, the percentage of recurrent incidents was highest in Warwickshire (60%), Oxfordshire and Cheshire (both 54%), and Buckinghamshire and Northamptonshire (both 50%) which is comparable with the HRA. The lowest percentage of recurrent incidents were in Leicestershire (24%), and Nottinghamshire (25%) (Figure 3.8.3).

Five counties in the Edge Area recorded an increase in the percentage of recurrent TB incidents in 2025 relative to 2024. The greatest increases were in Northamptonshire (absolute percentage increase 33%) East Sussex (27%) and Warwickshire (18%).

The remaining 6 counties experienced decreases in 2025 compared to 2024. The largest decline was seen in Berkshire (absolute percentage decrease 23%) followed by Leicestershire (11%) and Derbyshire (6%).

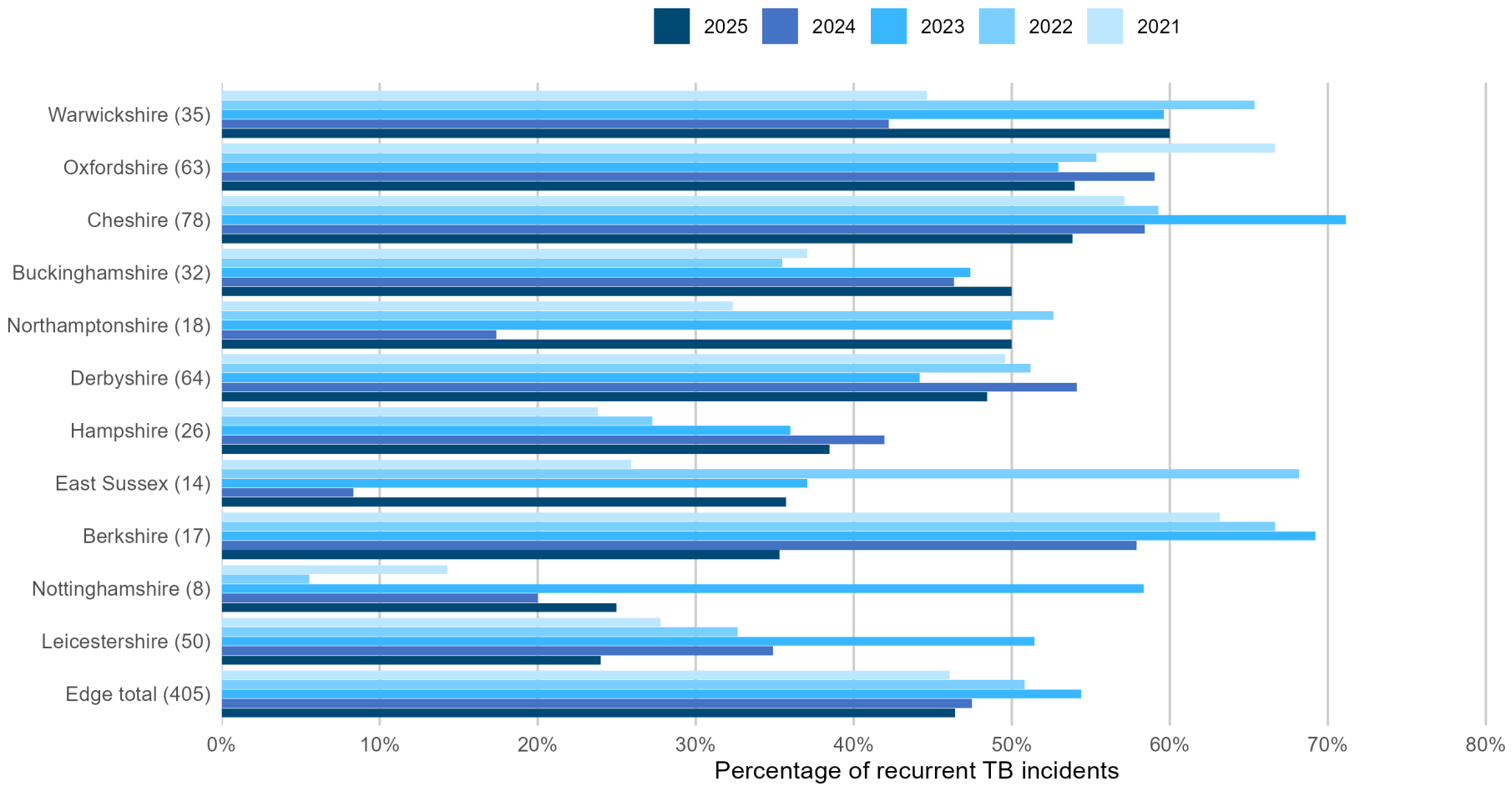


Figure 3.8.3 Annual percentage of recurrent TB incidents (new incidents in herds which had sustained a TB incident in the previous 3 years), per Edge area county, between 2021 and 2025. Counties are ranked by decreasing percentage recurrent incidents in 2025 (Total TB incidents are shown in parentheses).

In 2025, 19% of new TB incidents in the LRA were considered recurrent, a slight decrease compared to 2024 (21%). The number of recurrent herds in 2025 (20 herds) was also slightly lower in the LRA compared to 2024 (26 herds).

At a county or region-level in the LRA, the percentage of recurrent incidents was highest in the South East (34%) and Cumbria (21%). No recurrent herds were observed in the North East region and Isles of Scilly (Figure 3.8.4).

Two regions in the LRA saw an increase in the percentage of recurrent TB incidents in 2025 relative to 2024: the South East of the LRA (absolute percentage increase 17%) and Cumbria (absolute percentage increase 0.3%).

Three LRA counties or regions experienced decreases in 2025 compared to 2024. The largest decline was seen in Lincolnshire (absolute percentage decrease 39%) followed by the North West (6%) and Yorkshire and Humberside (2%).

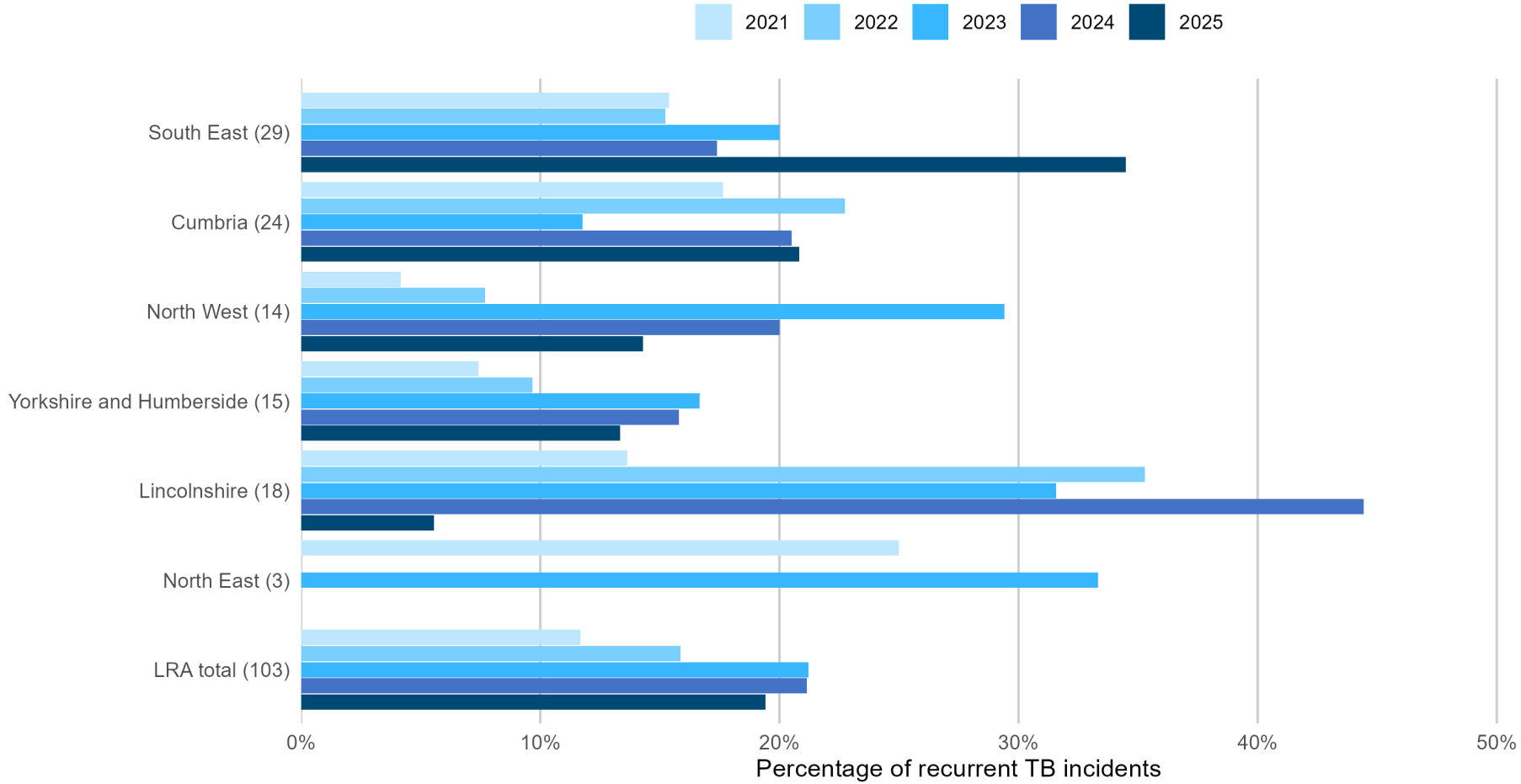


Figure 3.8.4 Annual percentage of recurrent TB incidents (new incidents in herds which had sustained a TB incident in the previous 3 years), per LRA county or region, between 2021 and 2025. Counties and regions are ranked by decreasing percentage recurrent incidents in 2025 (Total TB incidents are shown in parentheses). Note: The Isles of Scilly had no TB incidents at all in the 5-year period of interest, so they have been excluded from the figure.

3.8.2 Eighteen-month backwards recurrence

Looking at trends over a shorter period of recurrence can give additional insight into the likely origin of recurrent incidents especially when interpreted alongside patterns of longer-term recurrence.

The percentage of herds with new TB incidents in England in 2025 that had experienced another TB incident in the previous 18 months was 38%.

The percentage of 18-month recurrent TB incidents in the HRA increased steadily between 2021 (33%) and 2024 (43%) before reducing slightly to 40% in 2025 (Figure 3.8.5). The percentage of 18-month recurrent TB incidents increased from 32% in 2021 to 37% in 2023 in the Edge Area and remained stable between 2024 and 2025 (32%). The percentage has fluctuated in the LRA in the last 5 years and most recently it increased from 9% in 2024 to 17% in 2025, but this is from much smaller annual numbers of TB breakdown herds than in the other 2 areas of England.

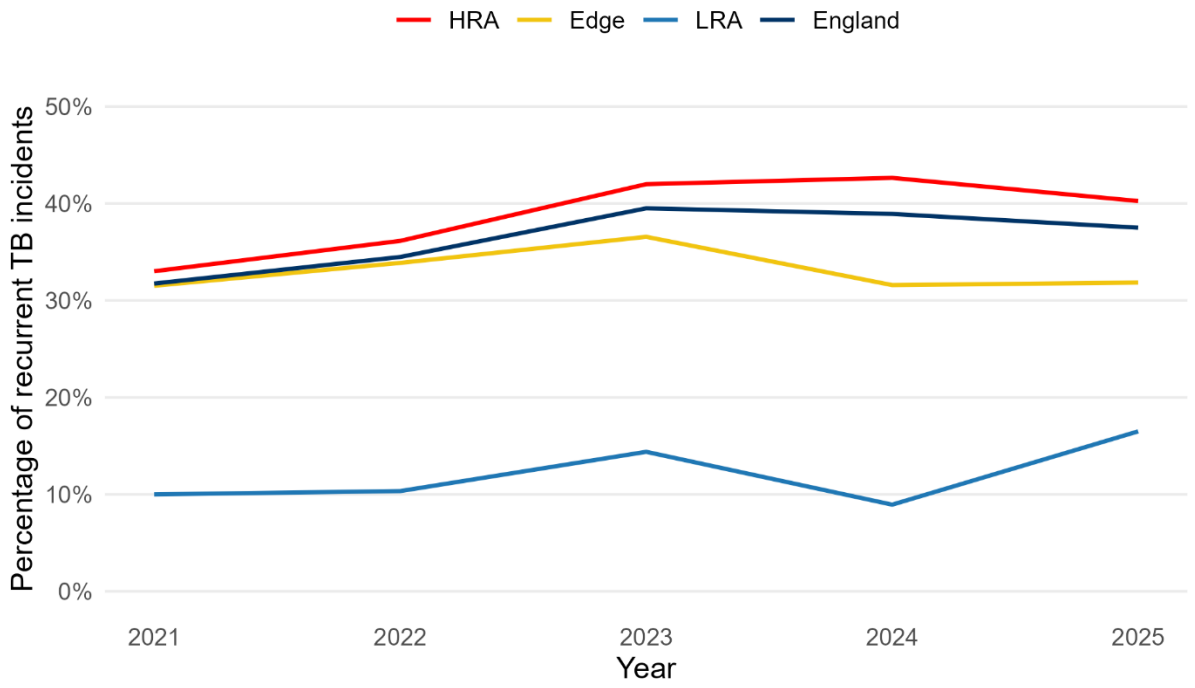


Figure 3.8.5 Annual percentage of TB incidents with a history of TB in the previous 18 months, in England overall and by risk area of England, between 2021 and 2025.

4.0 Detection of infected cattle in OTF herds: TB surveillance streams

4.1 Overview

The cattle TB surveillance programme involves both active surveillance (TB testing of live farm animals) and passive surveillance (post-mortem meat inspection (PMMI) for TB and other conditions during commercial slaughter in abattoirs).

TB surveillance activities in England can be categorised into 4 different streams:

- **Routine:** active surveillance through systematic herd level skin testing of most animals in OTF herds at a pre-defined interval of 6, 12 (all cattle over 6 weeks of age) or 48 months (all the breeding cattle plus replacements).
- **Area and Herd Risk:** more targeted, active surveillance with additional skin testing of OTF herds or individual cattle that are deemed to be at an increased risk of infection including inconclusive reactor re-tests, contiguous herd, radial, hotspot and tracing tests, permanently restricted herds on approved finishing units (AFUs) with grazing, and check tests conducted 6 and/or 12 months after the conclusion of a TB incident, or following laboratory confirmation of a slaughterhouse case of TB.
- **Trade and Other:** active targeted surveillance through tuberculin skin testing of individual animals moved between OTF herds, such as compulsory pre- and post- movement skin testing, other private TB tests requested and funded by farmers, and tests at artificial insemination centres.
- **Slaughterhouse:** passive surveillance via PMMI of all cattle commercially slaughtered for human consumption in abattoirs, as well as cattle that die on farm and are disposed of at an animal by-product processing facility.

For a full description of the tests and test codes carried out under each surveillance stream please see the explanatory supplement for the annual reports 2025.

For the purposes of this report, TB tests are reported at the herd level, whether they were true herd tests or not. In other words, targeted tests of selected individual animals occurring in the same herd at the same time (for example IR re-tests, tracing tests and pre-movement tests) were counted once as a single TB testing event.

A total of 70,605 TB testing events were conducted on OTF herds in England in 2025. Of these, 34,561 (49%) were targeted tests of selected individual animals in the same herd at the same time, and 36,044 (51%) involved testing all eligible animals in the herd (herd tests). All these TB testing events were comprised of 5,069,611 individual TB skin tests carried out on live animals (the same animal may have been tested more than once). Compared with 2024, this represents a 1.2% decrease in number of TB test events and a 4.0% decrease in the number of individual TB skin tests carried out. As described in Section 2.3, a small proportion of individual animal-level test records for 2025 were unavailable from the source data

and may account for a small part of the apparent reduction in individual testing activity.

In total, 1,527,210 cattle from holdings in England underwent PMMI at commercial slaughter in 2025. This figure has remained stable for the past 5 years.

The majority of the 70,605 TB testing events in England in 2025 were nearly equally split between the Trade and Other (41.8%) and the Routine surveillance streams (41.4%), followed by area and herd risk testing (16.8%) (Figure 4.1.1). The annual distribution of TB herd tests by surveillance stream has been stable since 2022, following the introduction of default 6-monthly routine testing in all counties of the HRA in July 2021 (with the first new additional tests conducted from January 2022). Prior to 2022, a greater percentage of the herd tests in England were carried out under the Area and Herd Risk surveillance stream.

The majority of individual cattle tests in 2025 were carried out under the Routine surveillance stream (65.8%), which also disclosed the greatest percentage of all new TB incidents (61.5%) and the greatest percentage of all reactors (61.8%) (Figure 4.1.1). This, again, reflects the introduction of 6-monthly routine testing in the HRA, and prior to 2022, a greater percentage of cattle tests, new TB incidents and reactors in England were under the Area and Herd Risk surveillance stream.

Note that the number and percentages of reactors shown in Figure 4.1.1 refers to skin test reactors detected in OTF herds at the disclosing test of a new TB incident in 2025. This therefore does not include reactors removed on a subsequent test carried out whilst a herd was already undergoing a TB incident.

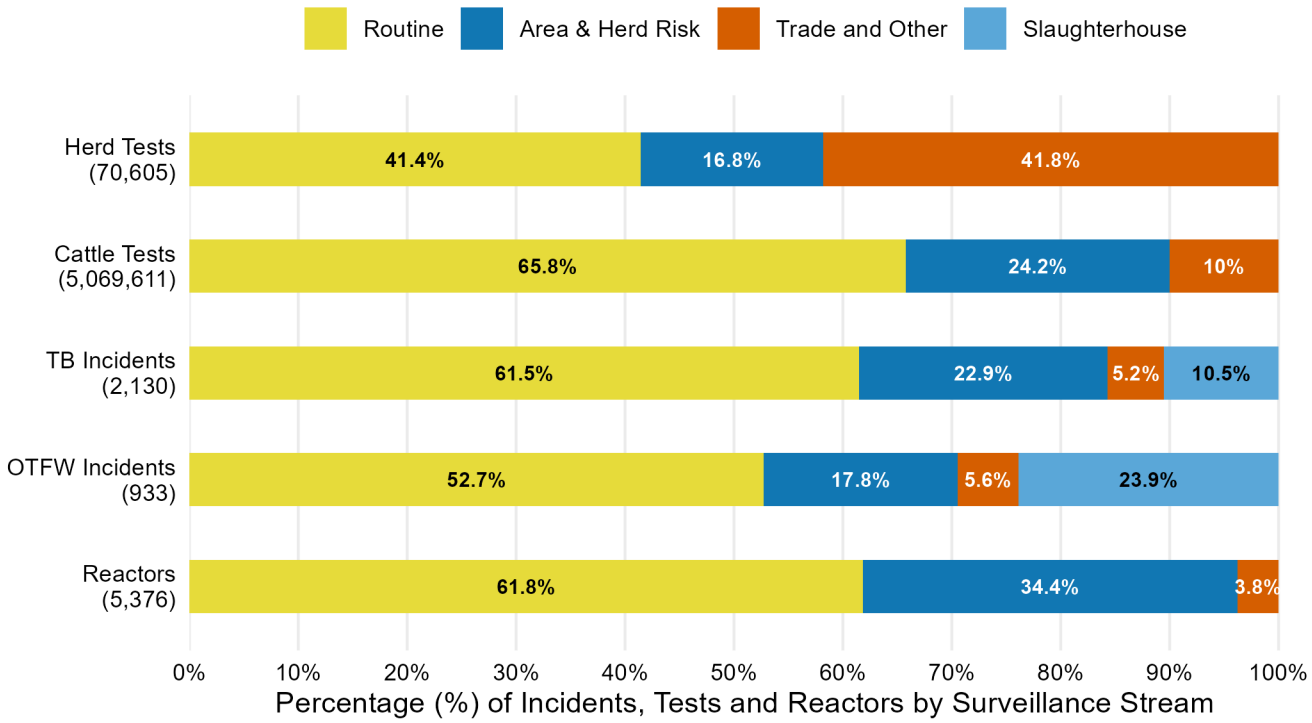


Figure 4.1.1 Percentage of herd tests, individual cattle tests, TB incidents, OTF-W incidents and skin test reactors detected by surveillance stream in 2025 in England. Total numbers are indicated in parentheses. TB herd tests, cattle tests and reactors detected do not apply to the slaughterhouse surveillance stream. The number of reactors refers to skin test reactors detected in OTF herds at the disclosing test of a new TB incident in 2025 and therefore does not include IFN-γ or antibody test positive animals or those reactors removed on a subsequent skin test undertaken whilst a herd was sustaining a TB incident.

Routine surveillance accounted for 48.5% of total herd tests carried out in the HRA in 2025, compared to 37.4% in the Edge Area and 23.5% in the LRA (Tables 4.1.1 a, b and c, respectively). A smaller proportion of tests were carried out under the Area and Herd Risk surveillance stream in the HRA and Edge Area (13.3% and 16.4%, respectively). In comparison, over a quarter of tests in the LRA (28.8%) were conducted under this surveillance stream.

A relatively large proportion of herds were tested across all risk areas under the Trade and Other surveillance stream (38.2% to 47.7%). These tests very rarely involve the whole herd and only a specific cohort of animals are tested. For example, animals selected for sale will undergo a privately funded pre-movement skin test unless they were included in a government-funded herd test carried out within 60 days before the movement. Similarly, animals that have moved into the LRA or the annual surveillance part of the Edge Area from higher risk areas of GB will undergo a post movement skin test if they are not going to be slaughtered within 120 days.

In the HRA and Edge Area, the greatest percentage of total new TB incidents in 2025 were disclosed by herd tests under the Routine surveillance stream (65.8% and 54.6%, respectively). In the LRA, the greatest percentage of total TB incidents were disclosed by herd tests under the Area and Herd Risk surveillance stream (57.3%).

Despite a large percentage of all the herd tests being carried out under the Trade and Other surveillance stream across the 3 risk areas, this stream disclosed a relatively small percentage of the total TB incidents (4.6 to 12.6%). This is not surprising given that pre- and post- movement tests generally involve a small fraction of animals in the herds in question, as stated above.

In the HRA, 10.9% of all new TB incidents, and 25.0% of OTF-W incidents in 2025, were disclosed by slaughterhouse surveillance (identification of M. bovis in tuberculous lesions reported by meat inspectors during commercial slaughter of cattle). This was similar in the Edge Area (8.9% and 19.0% of total and OTF-W incidents, respectively), and the LRA (10.7% and 28.2% of total and OTF-W incidents, respectively).

Table 4.1.1a. Total number of herd tests, TB incidents, OTF-W incidents, TB incidents per 100 herd tests and reactors per 1,000 cattle tested disclosed in OTF cattle herds by surveillance stream in 2025 in the HRA. Percentage of HRA total shown in parentheses. Herd tests in the Trade and Other stream are not whole herd tests, they are test events on a cohort of the herd. NA is not applicable.

Surveillance Stream	Total Herd Tests N (%)	Total TB Incidents N (%)	OTF-W Incidents N (%)	TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
Routine	19,874 (48.5)	1,067 (65.8)	401 (56.9)	5.4	1.2
Area and Herd Risk	5,460 (13.3)	304 (18.7)	96 (13.6)	5.6	2.2
Trade and Other	15,640 (38.2)	74 (4.6)	32 (4.5)	0.5	0.5
Slaughterhouse	NA	177 (10.9)	176 (25.0)	NA	NA
HRA Total (% of England total)	40,974 (58.0)	1,622 (76.2)	705 (75.6)	4	1.3

Note: specific operational circumstances can arise which result in OTF-S incidents being linked to the slaughterhouse surveillance stream. This occurred in one TB incident in the HRA in 2025.

Table 4.1.1b. Total number of herd tests, TB incidents, OTF-W incidents, TB incidents per 100 herd tests and reactors per 1,000 cattle tested disclosed in OTF cattle herds by surveillance stream in 2025 in the Edge Area. Percentage of Edge Area total shown in parentheses. The herd tests in the Trade and Other stream are not whole herd tests; they are test events on a cohort of the herd. NA is not applicable.

Surveillance Stream	Total Herd Tests N (%)	Total TB Incidents N (%)	OTF-W Incidents N (%)	TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
Routine	6,491 (37.4)	221 (54.6)	88 (46.6)	3.4	0.7
Area and Herd Risk	2,848 (16.4)	125 (30.9)	51 (27.0)	4.4	1.9

Trade and Other	8,010 (46.2)	23 (5.7)	14 (7.4)	0.3	0.4
Slaughterhouse	NA	36 (8.9)	36 (19.0)	NA	NA
Edge Area Total (% of England total)	17,349 (24.6)	405 (19.0)	189 (20.3)	2.3	0.9

Table 4.1.1c Total number of herd tests, TB incidents, OTF-W incidents, TB incidents per 100 herd tests and reactors per 1,000 cattle tested disclosed in OTF cattle herds by surveillance stream in 2025 in the LRA. Percentage of LRA total shown in parentheses. Herd tests in the Trade and Other stream are not whole herd tests, they are test events on a cohort of the herd. NA is not applicable.

Surveillance Stream	Total Herd Tests N (%)	Total TB Incidents N (%)	OTF-W Incidents N (%)	TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
Routine	2,884 (23.5)	21 (20.4)	3 (7.7)	0.7	0.1
Area and Herd Risk	3,536 (28.8)	58 (56.3)	19 (48.7)	1.6	0.3
Trade and Other	5,862 (47.7)	13 (12.6)	6 (15.4)	0.2	0.1
Slaughterhouse	NA	11 (10.7)	11 (28.2)	NA	NA
LRA Total (% of England total)	12,282 (17.4)	103 (4.8)	39 (4.2)	0.8	0.2

4.1.1 Trends over time in surveillance streams by risk area

Routine surveillance accounted for the highest percentage of new TB incidents in the HRA over the past 5 years (42.8 to 65.9%, Figure 4.1.2). There was a gradual increase in detection by routine surveillance from 2021 to 2023, which has since plateaued through to 2025. This increase was likely due to the introduction of 6-monthly herd testing as the default routine surveillance frequency in the HRA from July 2021 (effective January 2022), having been first introduced in Staffordshire and Shropshire in 2020. Concurrently, the relative contribution of Area and Herd Risk surveillance in the HRA has decreased over time from 37.7% of new TB incidents in 2021 to 18.7% in 2025. Despite a small increase in 2025, compared to 2024 (10.9% and 9.1%, respectively), the contribution of slaughterhouse surveillance remained lower than 2021 (12.5%).

In the Edge Area, the distribution of new TB incidents disclosed by each surveillance stream was broadly similar to that observed in the HRA and England overall but has remained more stable over the past 5 years.

In the LRA, Area and Herd risk surveillance disclosed the highest proportion of new TB incidents across each of the previous 5 years (45.5 to 60.2%). Routine surveillance disclosed comparatively fewer incidents than in the HRA and Edge Area (19.4 to 38.3%). Possible reasons for this include the lower (4-yearly) routine herd testing frequency in the LRA, coupled with the fact that usually only adult breeding cattle and those destined to be replacements are tested under the Routine surveillance stream in the LRA. Secondly, Area and Herd risk surveillance in the LRA includes test types that are targeted at higher risk herds and areas, for example radial and hotspot testing, and therefore may be expected to disclose more incidents.

A greater proportion of incidents were detected via Trade and Other surveillance (5.8% to 13.1%) in the LRA in comparison to the other risk areas. There appears to be greater annual variability in the distribution of incidents disclosed by the different surveillance streams in the LRA. This is likely in part due to the lower number of TB incidents recorded each year in this risk area in addition to fluctuations in number and type of test carried out.

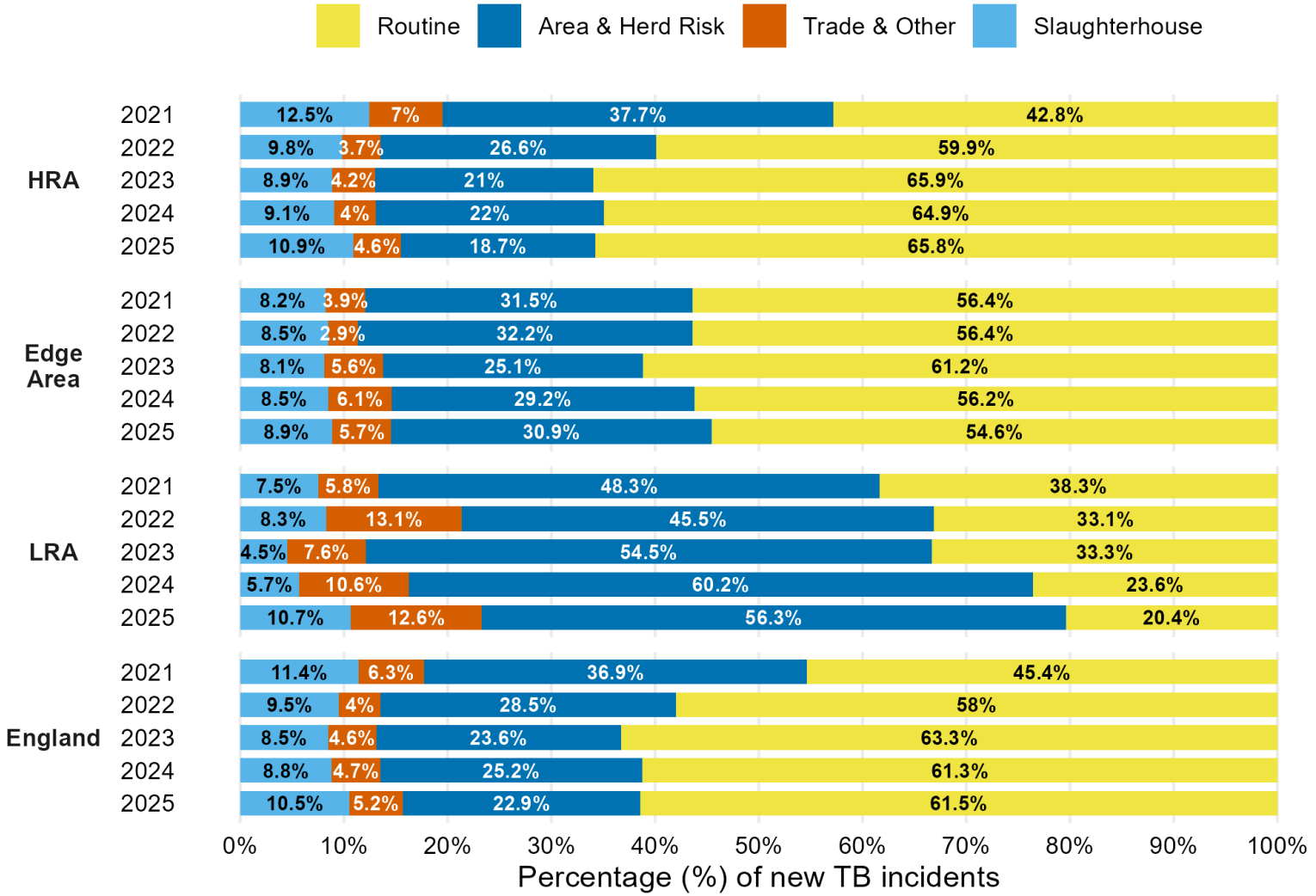


Figure 4.1.2 Annual percentages of new TB incidents detected by different surveillance streams within each risk area from 2021 to 2025.

4.2 Routine surveillance

Routine surveillance includes Whole Herd Tests (WHTs), Routine Herd Tests (RHTs) and New Herd Tests (NHTs). WHTs are skin tests of every animal over 6 weeks of age in a herd at once carried out at predetermined intervals (by default every 6 or 12 months in the Edge Area, and every 6 months in the HRA), to assess the infection status of the entire herd. In the LRA, WHTs are only carried out on specific herds (producer-retailer dairy herds or herd on city/open farms) which are placed under annual testing at the discretion of APHA. In 2025, this was the predominant test type within the Routine surveillance stream in the HRA and Edge Area (Table 4.2.1a and b), accounting for 97.4% and 96.8% of herd tests, respectively. Unsurprisingly, WHTs under the routine surveillance stream disclosed the greatest number of new TB incidents and reactors in the HRA and Edge Area in 2025 (98.9% and 98.6%, respectively: Table 4.2.1a and b). As expected, in the LRA WHTs accounted for a much smaller percentage of herd tests and new TB incidents under this surveillance stream in 2025 (8.4% and 14.3%, respectively: Table 4.2.1c).

RHTs are also part of a scheduled TB surveillance programme but are only carried out in the LRA, where herds are routinely tested every 4 years by default. These skin tests normally only include breeding bulls and cows, along with any young bovines in the herd that will be used for breeding (except calves under 42 days old). Consistent with previous years, RHTs were the predominant test type of the Routine surveillance stream in the LRA in 2025 and consequently disclosed the greatest number of new TB incidents within this stream (Table 4.2.1c). RHTs are not carried out in the HRA or the Edge Area, where the emphasis is on testing herds frequently to reduce the relatively high incidence and prevalence of bovine TB, rather than on preventing disease incursions into a historically very low TB incidence area.

New herd tests (NHTs) include every eligible animal in the herd and are conducted as soon as possible after a herd is newly registered with APHA. NHTs made up a relatively large proportion of the tests carried out under the routine surveillance stream in the LRA in 2025 (13.7%), compared to the HRA (2.6%) and Edge Area (3.2%: Tables 4.2.1a-c). However, this test type did not detect any TB incidents in the LRA in 2025. Although NHTs were only a small proportion of the tests completed in the HRA and Edge Area in 2025, they performed comparatively well against WHTs in terms of infection detection, as indicated by the rates of new TB incidents per 100 herd tests and reactors per 1,000 cattle tested (Tables 4.2.1a-c). This has been the case historically and is likely explained by the greater force of infection in these risk areas.

Table 4.2.1a Performance of the different test types within the Routine surveillance stream in the HRA in 2025. NA is not applicable.

Test type	Total Herd Tests N (%)	Total new TB Incidents N (%)	New OTF-W Incidents N (%)	Reactors N (%)	New TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
New Herd Tests	514 (2.6)	12 (1.1)	11 (2.7)	41 (1.5)	2.3	2
Whole Herd Tests	19,360 (97.4)	1,055 (98.9)	390 (97.3)	2,751 (98.5)	5.4	1.2
Routine Herd Tests	NA	NA	NA	NA	NA	NA
HRA Total	19,874	1,067	401	2,792	5.4	1.2

Table 4.2.1b Performance of the different test types within the Routine surveillance stream in the Edge Area in 2025. NA is not applicable.

Test type	Total Herd Tests N (%)	Total new TB Incidents N (%)	New OTF-W Incidents N (%)	Reactors N (%)	New TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
New Herd Tests	209 (3.2)	3 (1.4)	2 (2.3)	11 (2.2)	1.4	1.5
Whole Herd Tests	6,282 (96.8)	218 (98.6)	86 (97.7)	498 (97.8)	3.5	0.7
Routine Herd Tests	NA	NA	NA	NA	NA	NA
Edge Area Total	6,491	221	88	509	3.4	0.7

Table 4.2.1c Performance of the different test types within the Routine surveillance stream in the LRA in 2025.

Test type	Total Herd Tests N (%)	Total new TB Incidents N (%)	New OTF-W Incidents N (%)	Reactors N (%)	New TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
New Herd Tests	396 (13.7)	0 (0.0)	0 (0.0)	0 (0.0)	0	0
Whole Herd Tests	242 (8.4)	3 (14.3)	0 (0)	5 (22.7)	1.2	0.2

Routine Herd Tests	2,246 (77.9)	18 (85.7)	3 (100.0)	17 (77.3)	0.8	0.1
LRA Total	2,884	21	3	22	0.7	0.1

4.3 Area and Herd Risk testing

The Area and Herd Risk (AHR) surveillance stream targets herds that are at a temporary heightened risk of infection due to factors such as the conclusion of a recent TB incident, geographical proximity to another TB incident, the purchase or sale of an animal which subsequently becomes a reactor, the notification of laboratory-positive slaughterhouse case(s) of TB in cattle from the holding. The AHR surveillance stream also includes specific scenarios in which the IFN-γ test is deployed as a disclosing test rather than a supplementary test, for example in privately funded IFN-γ tests.

Post-incident tests accounted for the largest proportion of tests carried out under the AHR stream in HRA herds in 2025 (33.8%, Table 4.3.1a). Post-incident tests are enhanced surveillance tests carried out after a herd regains OTF status at the end of a previous incident. Post-incident tests were also responsible for most TB incidents (90.1%) and reactors (82.2%) disclosed in the HRA in 2025 under AHR (Table 4.3.1a).

It is likely that many of the incidents disclosed by post-incident tests are the result of residual M. bovis infection remaining in the herd from the last TB incident. This would be consistent with the results presented in chapter 3.8.1, where 59% of herds with a new TB incident in the HRA in 2025 had experienced another TB incident in the previous 3 years. However, reintroduction of infection is also possible.

IR re-tests are not whole herd tests, but tests on individual animals that were identified as an IR in a preceding skin test. In this report, any resulting TB incidents from an IR re-test have been counted against the preceding test type (which may be area and herd risk stream test or routine surveillance stream). Therefore, only the number of IR re-tests and number of reactors from these specific tests are displayed in Tables 4.3.1a-c. In the HRA in 2025, IR re-tests accounted for over a quarter of tests in the AHR stream (27.5% Table 4.3.1a). They also contributed 11.5% of reactors in this surveillance stream in the HRA, identifying considerably more reactors per 1000 cattle tested than other AHR test types (Table 4.3.1a).

Spread (or forward-) tracing tests are not whole herd tests. They are skin tests on individual animals that were moved out of an OTF-W incident herd, to another herd, before the detection of TB and loss of OTF herd status in the herd of origin. In 2025, spread tracing tests accounted for almost a quarter of tests carried out in the HRA under this surveillance stream (23.3%). However, they disclosed just 4 TB incidents and 5 reactors, accounting for only 1.3% and 0.4% of TB incidents and reactors, respectively (Table 4.3.1a).

Source (or back-) tracing tests are carried out when the herd in which a reactor has been detected is not believed to be the source of infection. These skin check tests will usually involve the entire source herd. Source tracing tests were only a small proportion of the AHR herd tests carried out in the HRA in 2025 (0.9%) and detected a relatively small number of new TB incidents per 100 herd tests completed (2.1 per 100 herd tests) in comparison with post incident check tests (Table 4.3.1a).

Contiguous herd testing disclosed the majority of the remaining TB incidents (4.3%), even though these tests contributed a relatively small proportion of the overall number of tests carried out in the HRA under this surveillance stream (4.4%).

Table 4.3.1a Performance of main test types within the Area and Herd Risk surveillance stream in the HRA in 2025**.** 'Other' includes VE-ASG (testing of restricted isolated groups of cattle within a herd at veterinary discretion), VE-SI (short interval tests on herds with an epidemiological link to a TB incident), VE-TBU (approved finishing unit tests) and VE-IFN (IFN-γ blood test).

Test type	Total Herd Tests N (%)	Total new TB Incidents N (%)	New OTF-W Incidents N (%)	Reactors N (%)	New TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
Contiguous herd tests	238 (4.4)	13 (4.3)	3 (3.1)	25 (2.0)	5.5	1.1
Spread tracing tests[1]	1,273 (23.3)	4 (1.3)	0 (0.0)	5 (0.4)	0.3	0.8
Source tracing tests	48 (0.9)	1 (0.3)	0 (0.0)	4 (0.3)	2.1	0.4
Post-incident tests	1,848 (33.8)	274 (90.1)	90 (93.8)	1,023 (82.2)	14.8	2.2
Check tests	66 (1.2)	2 (0.7)	0 (0.0)	6 (0.5)	3	0.3
IR re-tests[1,2]	1,502 (27.5)	NA	NA	143 (11.5)	NA	42.7
Other	485 (8.9)	10 (3.3)	3 (3.1)	38 (3.1)	2.1	0.8
HRA Total	5,460	304	96	1,244	5.6	2.2

[1] Unlike the other tests in this table (whole-herd test events), spread tracing and IR re-tests are tests of selected individual animals.

[2] TB incidents disclosed through an IR re-test have been attributed to the test type that preceded the IR re-test and disclosed the IR requiring re-testing.

The largest proportion of tests carried out under the AHR stream in Edge Area herds in 2025 were spread tracing tests (27.1%). However, those tests only disclosed 2 TB incidents (1.6%), and 25 reactors (5.2%, Table 4.3.1b). As is the case in the HRA, these tests are only carried out on a specific individual animal, not the whole herd.

Post incident tests represented a smaller proportion (17.3%) of the tests carried out under the AHR surveillance stream in 2025. However, these tests accounted for over half of the new TB incidents (54.4%) and reactors (55.1%) and disclosed the highest number of TB incidents per 100 herd tests (13.8, Table 4.3.1b). This is similar to 2024, but differs from 2023, where a greater proportion of both total TB and OTF-W incidents were disclosed by post incident tests (84.5% and 83.7% respectively). This is likely related to an increase in radial tests carried out in 2024 and 2025 compared to 2023 (481 versus 156 herd tests, respectively). Radial tests disclosed almost a quarter of new TB incidents (23.2%) and well over a quarter of OTF-W incidents (29.4%) in 2025.

Hotspot tests and IR re-tests made up 12.9% and 15.9% of herd tests under the AHR in the Edge Area, respectively. Hotspot tests disclosed 6.5% of TB incidents and 2.3% of reactors. IR re-tests identified 8.2% of reactors, and like the HRA, generated considerably more reactors per 1000 cattle tested than the other test types (Table 4.3.1b).

Contiguous herd tests, source tracing tests and check tests represented a small proportion of AHR tests carried out in the Edge Area in 2025. However, as in previous years, these tests continued to perform well in terms of TB incidents detected per 100 herd tests (Table 4.3.1b).

Table 4.3.1b Performance of the main test types within the Area and Herd Risk surveillance stream in the Edge Area in 2025. ‘Other’ includes VE-ASG (testing of restricted isolated groups of cattle within a herd at veterinary discretion), VE-SI (short interval tests on herds with an epidemiological link to a TB incident), and VE-IFN (IFN-γ blood test).

Test type	Total Herd Tests N (%)	Total new TB Incidents N (%)	New OTF-W Incidents N (%)	Reactors N (%)	New TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
Contiguous herd tests	180 (6.3)	9 (7.2)	7 (13.7)	14 (2.9)	5.0	0.6
Radial tests	481 (16.9)	29 (23.2)	15 (29.4)	71 (14.9)	6.0	1.4
Hotspot tests	368 (12.9)	8 (6.4)	3 (5.9)	11 (2.3)	2.2	0.2

Spread tracing tests[1]	771 (27.1)	2 (1.6)	1 (2)	25 (5.2)	0.3	6.5
Source tracing tests	15 (0.5)	1 (0.8)	1 (2)	1 (0.2)	6.7	0.4
Post-incident tests	494 (17.3)	68 (54.4)	20 (39.2)	263 (55.1)	13.8	2.3
Check tests	24 (0.8)	3 (2.4)	1 (2)	12 (2.5)	12.5	3.1
IR re-tests[1, 2]	452 (15.9)	NA	NA	39 (8.2)	NA	50.5
Other	63 (2.2)	5 (4)	3 (5.9)	41 (8.6)	7.9	5.2
Edge Area Total	2,848	125	51	477	4.4	1.9

[1] Unlike the other tests in this table (whole-herd test events), spread tracing and IR re-tests are tests of selected individual animals.

[2] TB incidents disclosed through an IR re-test have been attributed to the test type that preceded the IR re-test and initially generated the IR requiring re-testing.

Just under half of the tests carried out under the AHR stream in LRA herds in 2025 were radial tests (44.9%), which also disclosed the greatest number and proportion of the total TB incidents (50.0%) and reactors (38.8%, Table 4.3.1c). Hotspot tests contributed about a fifth of total herd tests (21.0%) and triggered 17.2% of total TB incidents under this surveillance stream.

Spread tracing tests accounted for 24.3% of the test types under this surveillance stream in the LRA but only disclosed 6.9% of TB incidents. Post-incident tests accounted for only 3.7% of tests in this surveillance stream but detected 20.7% of TB incidents and 24.0% of reactors. As in previous years, check tests made up a small percentage of the overall number of tests, but performed well in terms of TB incidents disclosed per 100 herd tests, suggesting that it is still an important testing strategy in the LRA.

Table 4.3.1c Performance of main test types within the Area and Herd Risk surveillance stream in the LRA in 2025. 'Other' includes VE-SI (short interval tests on herds with an epidemiological link to a TB incident) and VE-IFN (IFN-γ blood test).

Test type	Total Herd Tests N (%)	Total new TB Incidents N (%)	New OTF-W Incidents N (%)	Reactors N (%)	New TB Incidents per 100 herd tests	Reactors per 1,000 cattle tested
Radial tests	1,587 (44.9)	29 (50.0)	9 (47.4)	50 (38.8)	1.8	0.2
Hotspot tests	741 (21.0)	10 (17.2)	5 (26.3)	16 (12.4)	1.3	0.1
Spread tracing tests[1]	859 (24.3)	4 (6.9)	1 (5.3)	5 (3.9)	0.5	1.1
Source tracing tests	24 (0.7)	1 (1.7)	1 (5.3)	9 (7.0)	4.2	3.5
Post-incident tests	130 (3.7)	12 (20.7)	2 (10.5)	31 (24.0)	9.2	1.0
Check tests	12 (0.3)	1 (1.7)	0 (0.0)	0 (0.0)	8.3	0.0
IR re-tests[1, 2]	179 (5.1)	NA	NA	11 (8.5)	NA	37.9
Other	4 (0.1)	1 (1.7)	1 (5.3)	7 (5.4)	25.0	12.3
LRA Total	3,536	58	19	129	1.6	0.3

[1] Unlike the other tests in this table (whole-herd test events), spread tracing and IR re-tests are tests of selected individual animals.

[2] TB incidents disclosed through an IR re-test have been attributed to the test type that preceded the IR re-test and initially generated the IR requiring re-testing.

4.4 Trade and Other Testing

The skin test types within this TB surveillance stream involve single animals or a batch of selected animals from within a herd. These are therefore referred to as 'animal' tests rather than herd tests. Multiple animal tests occurring in the same herd at the same time (such as pre- or post-movement tests) are counted as a single testing event in the tables below.

Most Trade and Other surveillance stream tests in all 3 risk areas in 2025 were pre-movement skin tests. Government-funded statutory TB herd tests completed with negative results within the required timeframe can also qualify as a pre- or post-movement test. Therefore, the figures provided in tables 4.4.1a-c below only represent bespoke TB movement tests funded and arranged by herd keepers.

In the HRA, pre-movement tests accounted for 99.2% of the Trade and Other surveillance stream tests carried out in 2025. Consequently, this test type detected the greatest percentage of the new TB incidents under this surveillance stream. Post-movement testing is not mandatory in the HRA as it is in the LRA and the annual TB surveillance portion of the Edge Area. Hence this test type accounted for only a very small percentage of the tests carried out under this surveillance stream and did not identify any new TB incidents (Table 4.4.1a).

Table 4.4.1a Performance of main test types within the Trade and other surveillance stream in the HRA in 2025.

Test type	Test events N (%)	Total new TB Incidents N (%)	New OTF-W Incidents N (%)	Reactors N (%)	New TB Incidents per 100 test events	Reactors per 1,000 cattle tested
Pre-export	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0.0	0.0
Post-import	46 (0.3)	3 (4.1)	2 (6.2)	3 (2.2)	6.5	2.3
Post-movement	59 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0.0	0.0
Pre-movement	15,523 (99.2)	71 (95.9)	30 (93.8)	131 (97.8)	0.5	0.5
Private	12 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)	0.0	0.0
Total	15,640	74	32	134	0.5	0.5

In the Edge Area, pre-movement tests accounted for 87.2% of the Trade and Other surveillance stream tests carried out in 2025, 85.7% of new TB incidents and 94.5% of test reactors (Table 4.4.1b). In August 2023, a policy change required that cattle moved to the annual TB testing parts of the Edge Area from higher TB incidence areas of GB, were to undergo a post-movement skin test for TB if not slaughtered within 120 days of arrival. For this reason, there has since been an increase in the number of post-movement tests carried out in the Edge Area.

Table 4.4.1b Performance of main test types within the Trade and other surveillance stream in the Edge Area in 2025.

Test type	Test events N (%)	TB Incidents N (%)	OTF-W Incidents N (%)	Reactors N (%)	TB Incidents per 100 test events	Reactors per 1,000 cattle tested
Pre-export	NA	NA	NA	NA	NA	NA
Post-import	15 (0.2)	0 (0.0)	0 (0.0)	0 (0)	0.0	0.0
Post-movement	994 (12.4)	4 (17.4)	2 (14.3)	3 (5.5)	0.4	0.2
Pre-movement	6,982 (87.2)	19 (82.6)	12 (85.7)	52 (94.5)	0.3	0.5
Private	19 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)	0.0	0.0
Total	8,010	23	14	55	0.3	0.4

Post movement tests made up a larger percentage of the Trade and Other surveillance stream tests in the LRA compared to the HRA and Edge Area (Tables 4.4.1a-c). Post movement testing of cattle moved into the LRA from higher risk areas of GB that have not been slaughtered within 120 days of arrival, has been compulsory since April 2016. Even so, pre-movement skin tests represented the largest number and proportion of TB tests conducted (and new incidents and reactors detected) under this TB surveillance stream in the LRA.

Table 4.4.1c Performance of main test types within the Trade and other surveillance stream in the LRA in 2025

Test type	Test events N (%)	TB Incidents N (%)	OTF-W Incidents N (%)	Reactors N (%)	TB Incidents per 100 test events	Reactors per 1,000 cattle tested
Pre-export	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0.0	0.0
Post import	59 (1)	1 (7.7)	0 (0)	1 (7.1)	1.7	0.7

Test type	Test events N (%)	TB Incidents N (%)	OTF-W Incidents N (%)	Reactors N (%)	TB Incidents per 100 test events	Reactors per 1,000 cattle tested
Post movement	1,821 (31.1)	7 (53.8)	4 (66.7)	7 (50)	0.4	0.1
Pre movement	3,857 (65.8)	4 (30.8)	2 (33.3)	6 (42.9)	0.1	0.1
Pre-sale check	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0.0	0.0
Private	125 (2.1)	1 (7.7)	0 (0)	0 (0)	0.8	0.0
LRA total	5,862	13	6	14	0.2	0.1

Of the international trade test events (pre-export and post-import) and private skin tests carried out in the HRA in 2025, 3 TB incidents with 3 reactors, were disclosed in 2025 by a post-import test in the HRA. No TB incidents were disclosed by these test types in the Edge Area in 2025. In the LRA in 2025, one TB incident was disclosed by a post-import test, and one TB incident was disclosed by a private test. Historically these test types have accounted for a very small proportion of TB incidents identified by the Trade and Other surveillance stream across England.

4.4.1 Historical trends in the percentage of incidents disclosed by pre-movement skin testing.

The percentage of TB incidents disclosed by bespoke pre-movement tests (excluding government-funded skin tests that can qualify as pre-movement tests) in England has fallen over the last decade. Between 2016 and 2019 the trend was stable at between 7.0 to 8.5%, before a small increase in 2020 (Figure 4.4.1). Over the following 2 years, the percentage more than halved, decreasing to 3.5% in 2022. It has since plateaued, remaining at just over 4.0% from 2023 to 2025 (Figure 4.4.1). In 2025, the majority of pre-movement tests were carried out in the HRA, and therefore the 10-year trend in the HRA closely follows that of England overall (Figure 4.4.1).

The percentage of TB incidents disclosed by pre-movement testing in the Edge Area in the last decade has fluctuated, largely following the pattern observed in England and the HRA. Between 2016 and 2019, the percentage decreased annually to 4.9%, before a sharp increase in 2020. As observed in England overall and the HRA, the percentage then decreased over the following 2 years. It has since increased again, and has remained between 4.7% and 5.4% from 2023 to 2025 (Figure 4.4.1).

In the LRA, the 10-year trend differs slightly from that of the other risk areas. From 2016 to 2019 the percentage of incidents disclosed by pre-movement testing increased to 6.1%. This was followed by a marked reduction in 2020 and 2021. The percentage then increased again in 2022, and has since observed less variation, ranging between 3.0% and 4.1% (Figure 4.4.1).

This decrease in the impact of pre-movement testing as a supplementary surveillance tool is partly due to the replacement of annual testing with 6-monthly testing as the default frequency of routine TB surveillance for herds in the HRA, starting in 2020 with herds in Staffordshire and Shropshire and then rolled out to the rest of the HRA in 2021. More frequent routine herd surveillance for TB leads to earlier detection of infected herds and means that cattle farmers have more opportunities to move animals off their herds on the back of a government-funded, statutory skin herd test with negative results, without the need to arrange for privately funded pre-movement test.

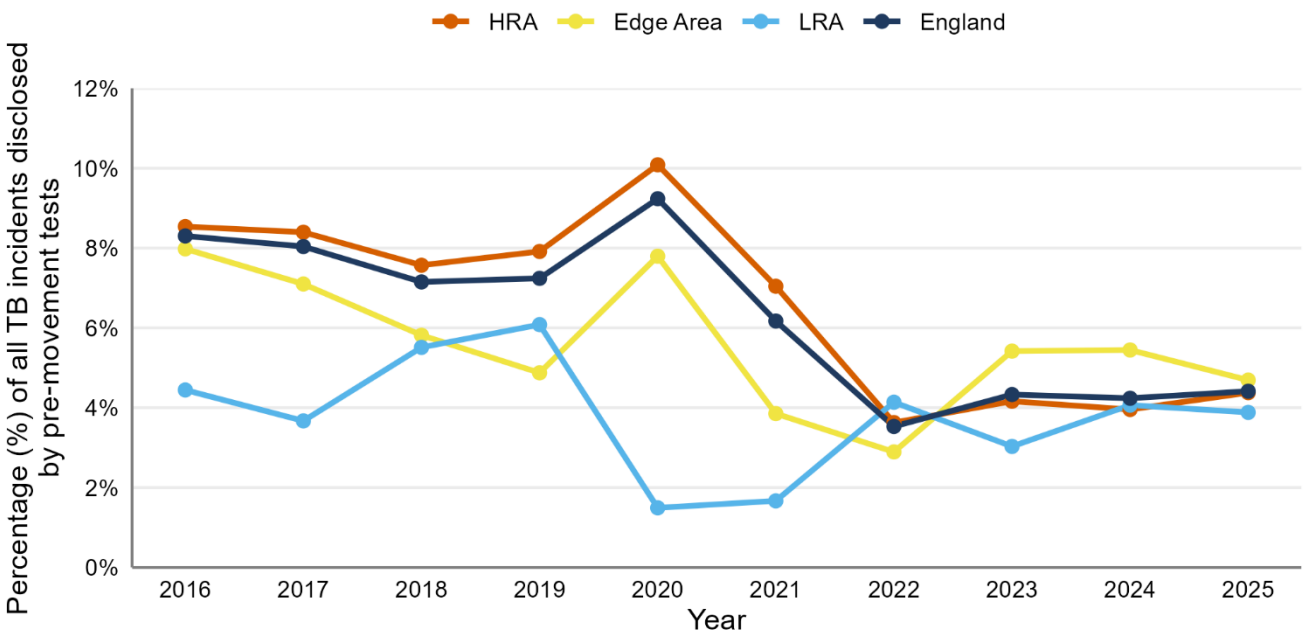


Figure 4.4.1 Annual percentage of total TB incidents disclosed by pre-movement testing between 2016 and 2025, by risk area. The data refers to tests categorised as (bespoke) pre-movement skin tests funded by herd keepers and does not include other (government-funded) tests that can qualify as a pre-movement test.

4.5 Slaughterhouse surveillance

Slaughterhouse surveillance is a supplementary TB surveillance stream that helps detect infected cattle (and herds) missed by active surveillance or that became infected since their last skin test. The probability of detecting TB incidents by slaughterhouse surveillance depends, among other variables, on the background

prevalence of infection, and the frequency and efficacy of active surveillance testing in cattle herds.

Over the past decade, the annual percentage of total new TB incidents initiated by PMMI in the slaughterhouse in the HRA has decreased significantly, from 14.0% in 2016 to 10.9% in 2025 (z-test p=0.003). This may be due to ante-mortem tests in the active surveillance streams identifying a greater proportion of infected animals before they are detected at commercial slaughter. Despite this, the percentage in 2025 (10.9%) represented a slight, significant increase compared to 8.9% in 2023 and non-significant increase compared to 9.1% in 2024 (z-test p=0.049 and p=0.075, respectively).

In the Edge Area, the total number of new TB incidents has also decreased over the same period. However, unlike the HRA, the percentage of the total TB incidents detected by slaughterhouse surveillance has not declined over the past decade. After a slight decline from 8.9% in 2016 to 5.0% in 2018, the percentage then increased to 8.2% in 2021 and has remained between 8.1% (2023) and 8.9% (2025) since.

Unlike the HRA and Edge Area, the number of new TB incidents in the LRA has remained relatively stable over the last decade. In contrast, the percentage of total TB incidents disclosed in the slaughterhouse has fluctuated over the same period. Between 2016 and 2020, it declined steadily from 13.4% to 5.2%. Since then, the percentage has ranged widely from a low of 4.5% in 2023 to a high of 11.0% in 2025. The annual number of new TB incidents in the LRA is relatively low, meaning that even small changes in the number of incidents disclosed in the slaughterhouse may have a large effect on the percentage of total TB incidents disclosed by this surveillance stream.

New TB incident occurrence via slaughterhouse surveillance relies on the detection (by PCR or bacteriological culture) of M. bovis from visible lesions of suspected TB found at PMMI, therefore TB incidents arising from slaughterhouse surveillance are typically OTF-W. On occasion, specific operational scenarios can arise which result in OTF-S incidents being linked to slaughterhouse cases. This occurred in one herd in the HRA in 2025 (Table 4.1.1a).

The annual percentage of OTF-W new incidents detected by slaughterhouse surveillance in the HRA and England overall has generally remained stable at around 20% over the past decade (Figure 4.5.1). However, in 2025 there was a slight increase to 23.9% in England and 25.0% in the HRA (Figure 4.5.1).

In the Edge Area, between 2016 and 2018 there was a decrease in the percentage of OTF-W incidents disclosed in the slaughterhouse from 15.7% to 8.3% (Figure 4.5.1). The percentage then increased from 2018 and has since remained relatively stable at just under 20%, from 2021 to 2025 (Figure 4.5.1).

In the LRA, between 2016 and 2020, the percentage of OTF-W incidents identified by slaughterhouse surveillance decreased from 45.0% to 14.3% (Figure 4.5.1). Since then, the percentage has fluctuated between 14.6% and 28.2% through to 2025 (Figure 4.5.1).

Historically, the percentage of OTF-W incidents detected by slaughterhouse surveillance was higher in the LRA compared to the other risk areas. This is to be expected, as most herds in the LRA are subjected to less frequent TB testing than in the Edge Area and HRA. Therefore, a higher proportion (but lower number) of TB-infected herds is expected to be detected at routine slaughter of cattle in the LRA.

However, in recent years, the percentage in the LRA has fluctuated around the same level as the HRA and Edge Area. This may be due to an increasing proportion of new TB incidents in the LRA occurring within hotspots, where herds undergo more frequent skin testing at 6 or 12-month intervals, thereby increasing the likelihood of infected herds being detected through on-farm surveillance.

Further analysis of the efficacy and contribution of slaughterhouse surveillance and monitoring performance may be found in the latest Slaughterhouse surveillance report for GB (2019 to 2022).

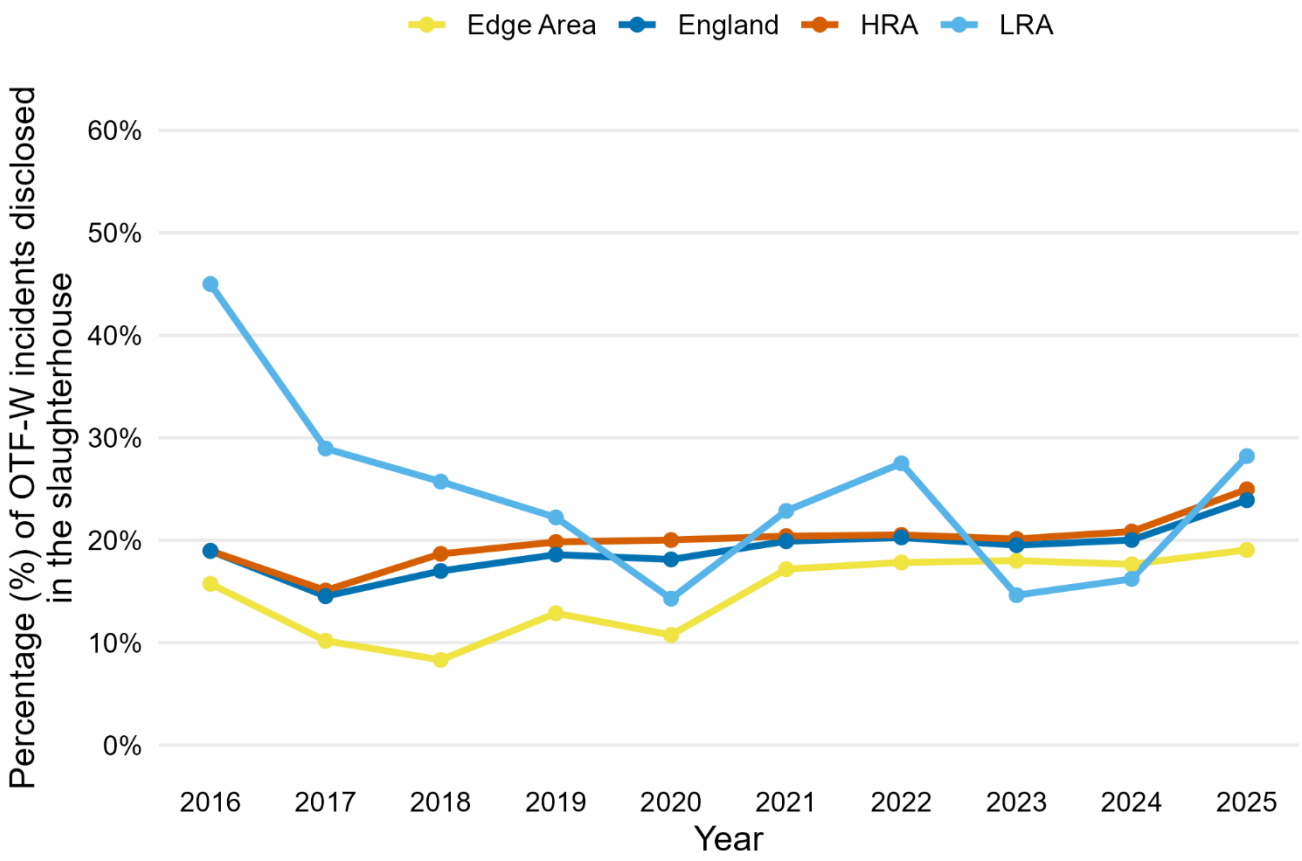


Figure 4.5.1 Annual percentage of new OTF-W incidents in each risk area that were disclosed by slaughterhouse surveillance from 2016 to 2025.

Overall, slaughterhouse surveillance detected between 5.0% (Dorset) and 50.0% (West Midlands) of the annual total TB incidents per HRA county in 2025. Slaughterhouse surveillance was particularly important in the detection of OTF-W incidents in West Midlands (50.0%), Hereford and Worcester (36.3%), Somerset (33.3%) and Avon (31.1%) (Figure 4.5.2). It is worth noting that there were only 4 incidents in the West Midlands in 2025 (all were OTF-W), 2 of which were disclosed in the slaughterhouse. The highest total number of new OTF-W incidents disclosed by slaughterhouse surveillance was in Devon, making up 22.0% of the 159 new OTF-W incidents in the county in 2025.

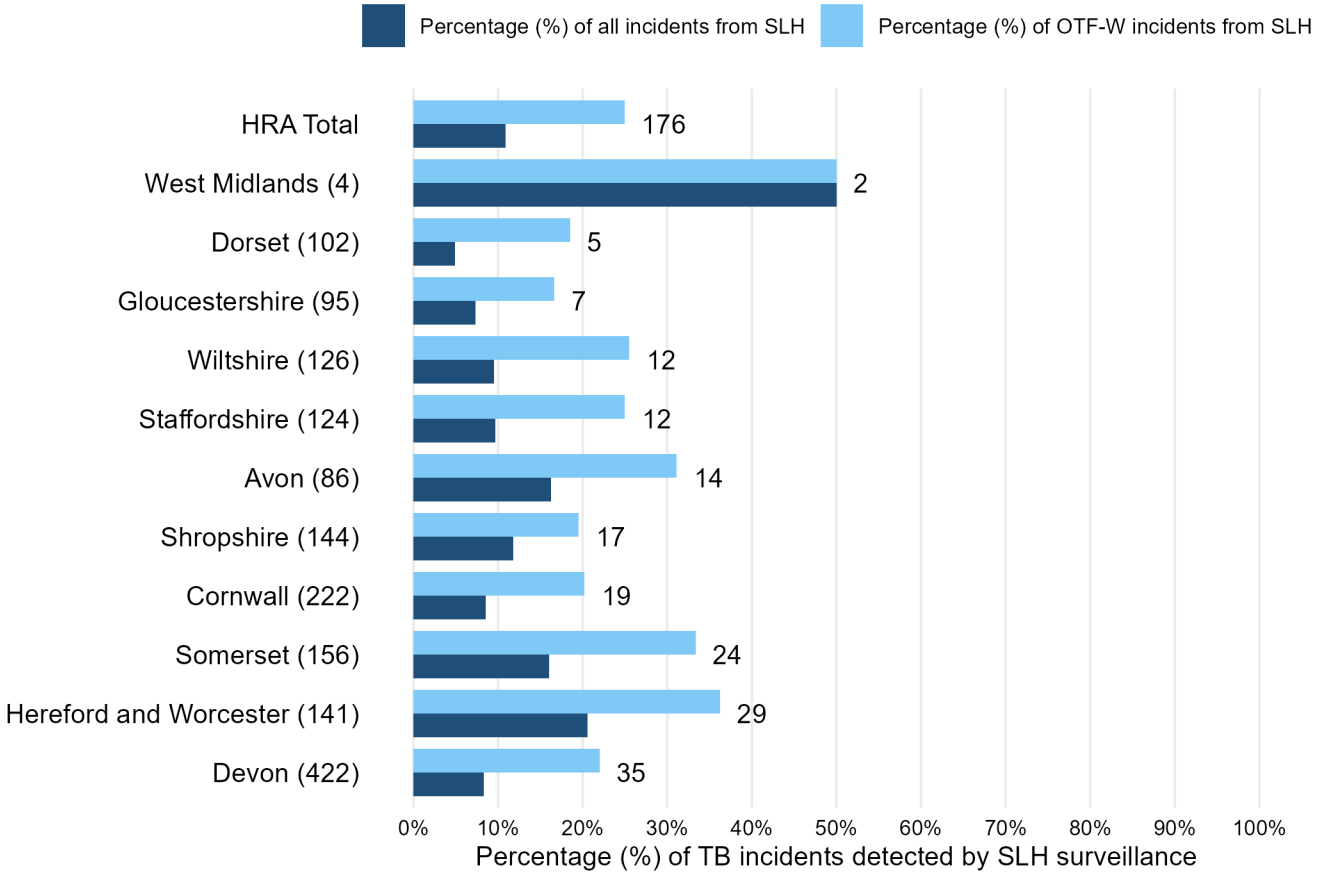


Figure 4.5.2 Percentage of TB incidents disclosed by Slaughterhouse (SLH) surveillance (routine post-mortem meat inspection) in each county of the HRA in 2025, for all TB incidents and OTF-W incidents. HRA counties are ranked by increasing number of OTF-W incidents disclosed by SLH surveillance (data label on the end of the bars). The total number of TB incidents in each county in 2025 are displayed in parentheses.

5.0 Detection of infected cattle during TB incidents: Supplementary interferon-γ testing

The IFN-γ blood test is an official supplementary diagnostic test used by APHA in conjunction with the skin test to enhance the sensitivity of TB testing in specific (mostly OTF-W) TB incident herds.

A total of 137,405 supplementary IFN-γ blood tests were conducted in 1,105 testing occasions in cattle herds in England in 2025, of which 7,271 tests were positive (5.3%). Compared with 2024 (6,353 positive results out of 128,346 IFN-γ tests), the number of IFN-γ tests conducted increased by 7.1%, and the percentage of positive test results also increased, from 4.9% (Table 5.1).

Table 5.1 Number of IFN-γ tests conducted on cattle and cattle herds in England in 2025, by risk area and testing reason. Number of tests conducted at the herd level is given in parentheses.

Reason for testing	HRA	Edge Area	LRA	England
Miscellaneous	12,780 (123)	6,292 (60)	981 (14)	20,053 (197)
New OTF-W incident outside HRA	0 (0)	14,779 (179)	10,616 (113)	25,395 (292)
Persistent OTF-W incident	13,099 (80)	1,352 (8)	0 (0)	14,451 (88)
Chronic OTF-W incident management	11,698 (71)	555 (4)	0 (0)	12,253 (75)
Recurrent OTF-W incident	55,301 (374)	9,952 (79)	0 (0)	65,253 (453)
Total number of IFN-γ tests conducted on cattle (Number conducted on herds)	92,878 (648)	32,930 (330)	11,597 (127)	137,405 (1,105)

Historically (prior to 2018) there were notable differences between risk areas in the number of IFN-γ tests deployed and the percentage of positive IFN-γ tests, with the percentage of positive tests in the HRA far exceeding that of the LRA and Edge Area

(Figure 5.1). Prior to 2018, the IFN-γ test was mainly deployed in OTF-W incidents in the LRA and Edge Area. From 2018, the IFN-γ test started to be used alongside the SICCT test in the HRA to resolve chronic and persistent OTF-W incidents, and OTF-W incidents in badger control policy areas that had successfully completed at least 2 rounds of licensed culling. This resulted in a sharp increase in the number of tests conducted on cattle in the HRA from 18,206 in 2017 to 144,621 in 2021 (Figure 5.1).

The number of IFN-γ tests deployed in the Edge Area also rose in 2018 and 2019 due to increases in the number of OTF-W incidents detected in those years (Figure 5.1). However, the number of IFN-γ tests conducted on cattle in the Edge Area began to decrease from 2020, in line with a declining number of eligible herds with OTF-W incidents (Figure 5.1).

Since 2021, the number of IFN-γ tests conducted on cattle in the HRA and Edge Area has decreased. This is partly due to changes in IFN-γ testing policy in the HRA and 6-monthly testing Edge Area in July 2021, and partly due to a decline in the annual number of OTF-W incidents, resulting in a smaller pool of herds eligible for IFN-γ testing (Figure 5.1). Mandatory IFN-γ testing shifted away from herds in badger control areas and instead focused on all herds experiencing recurrent OTF-W incidents (incident herds experiencing a new TB incident within 18 months of regaining OTF status following a previous OTF-W incident). The test deployment policy was unchanged in the LRA and the annual surveillance testing part of the Edge Area, where all new OTF-W incidents continued to be subjected to mandatory IFN-γ testing. Any chronic and persistent OTF-W incidents across the HRA and Edge Area also continued to be eligible for a mandatory IFN-γ test. Outside these scenarios, the deployment of the IFN-γ blood test was at the discretion of APHA case veterinarians. Additionally, from the 1 September 2025, government-funded voluntary IFN-γ testing was available to new OTF-W incidents in the HRA and 6-monthly testing Edge Area that did not qualify for mandatory IFN-γ testing under the existing policy.

The number of IFN-γ tests conducted on cattle in the LRA has fluctuated over the last 10 years, though at a lower frequency than the HRA and Edge Area, ranging between 3,626 (2020) and 16,558 (2017, Figure 5.1). Over the same timeframe, the percentage of additional IFN-γ test positive animals removed also fluctuated and followed a similar pattern to the Edge Area, peaking at 4.3% in 2018 and again at 3.6% in 2021 (Figure 5.1). There was a subsequent decrease to 2.0% in 2022, before stabilising at around 3.0% from 2023 to 2025 (Figure 5.1).

Between 2017 and 2020, the percentage of additional IFN-γ test positive animals removed in the HRA declined from 10.9% to 4.9% while the number of tests conducted increased sharply (Figure 5.1). There was a subsequent small spike in the percentage in 2021 (6.0%), where the number of tests conducted peaked, before decreasing to 4.2% in 2022 (Figure 5.1). Since 2022, although the number of tests conducted in the HRA is lower than the peak of 2021, and has remained relatively

stable, the percentage of additional IFN-γ test positive animals removed has risen steadily each year to 6.0% in 2025 (Figure 5.1).

Conversely, the percentage of additional IFN-γ test positive animals removed in the Edge Area has remained lower and more stable than that observed in the HRA, varying between 3.1% in 2022 and 4.6% in 2018 over the past decade (Figure 5.1). This has been the case despite relatively large variation in the number of tests conducted, similar to those seen in the HRA (Figure 5.1).

TB incident herds in the HRA account for the greatest number of IFN-γ tests across England, and the percentage of additional IFN-γ test positive animals removed remains higher than the other risk areas. This may be indicative of appropriate targeting of IFN-γ testing in the HRA and the greater force of infection, relative to the other risk areas.

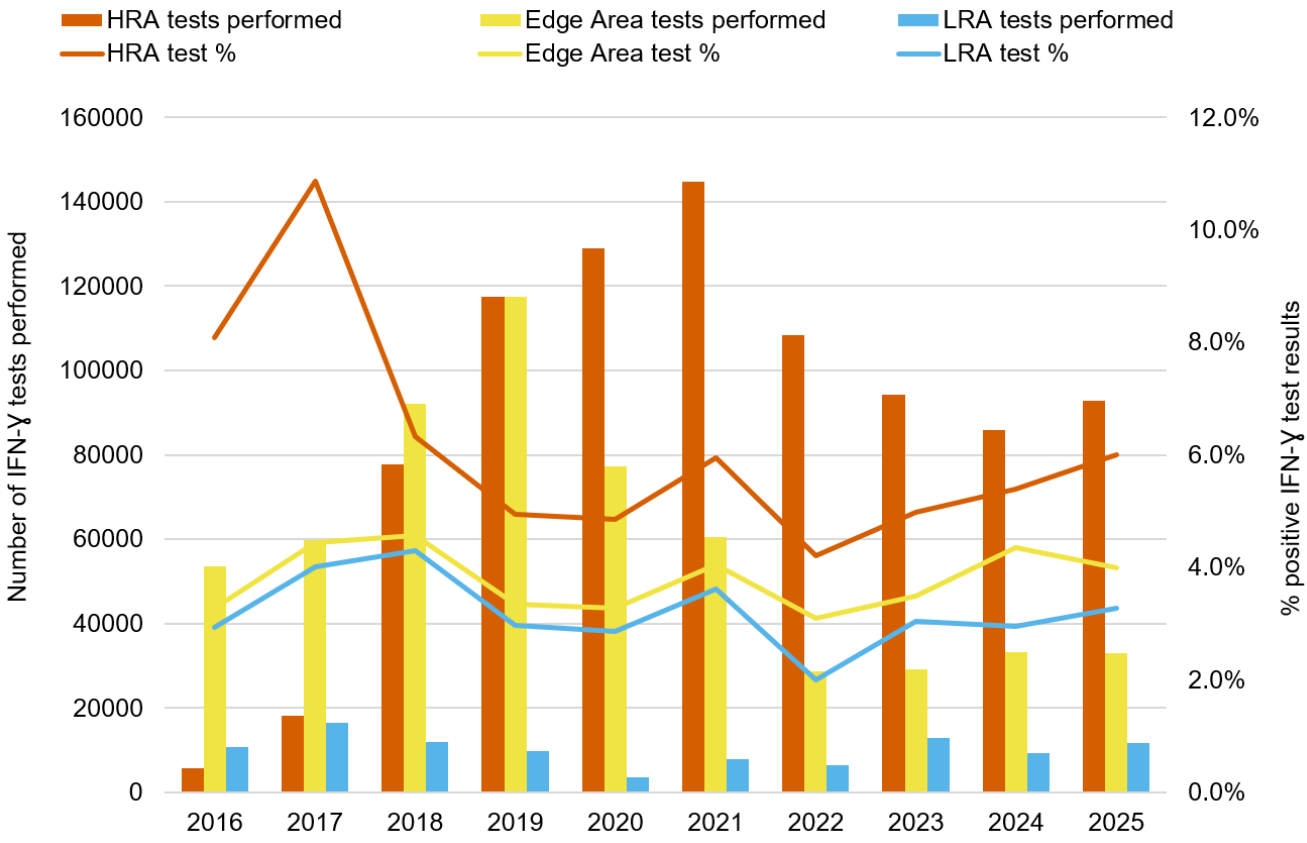


Figure 5.1 Annual number of IFN-γ tests conducted on cattle and percentage of additional IFN-γ test positive animals that were removed by risk area of England, 2016 to 2025.

Figure 5.1 description: A bar chart displaying the number of individual IFN-γ tests completed each year, and the percentage of additional IFN-γ test positive animals that were removed in the 3 risk areas of England over the last 10 years. The red bars represent the number of IFN-γ tests conducted on cattle in the HRA per year, the yellow bars represent the Edge Area, and the blue bars represent the LRA. The axis

for the number of IFN-γ tests deployed is on the left-hand side of the chart. The bar chart is superimposed with a line chart displaying the percentage of the IFN-γ tests completed in animals that were positive each year. The amber line represents the percentage of positive tests in the HRA, the yellow is for the Edge Area and the blue for the LRA. The corresponding axis with the percentage of positive animals is on the right-hand side of the chart.

A total of 1,105 IFN-γ tests were conducted on cattle herds in 2025, representing a 5% increase compared to 2024 (1,051 herds, Table 5.1). Of these, 765 (69.2%) disclosed at least one IFN-γ test positive animal. The percentage of herd tests returning at least one IFN-γ test positive animal was virtually the same in 2025 as it was in 2024 (731 herds, 69.6%).

The annual number of IFN-γ tests conducted on herds in the HRA and Edge Area over the past decade (Figure 5.2) followed a similar trend to that observed in the number of IFN-γ animal tests (Figure 5.1).

The annual percentage of IFN-γ herd tests which disclosed at least one positive animal in the HRA peaked in 2018 at 75%, before declining and stabilising at around 65%. This trend continued until 2021 when mandatory IFN-γ testing was introduced for recurrent OTF-W incidents in this part of England. The percentage of positive herd tests subsequently increased slightly and has remained between 69% and 74% up to 2025 (Figure 5.2).

In the Edge Area, the annual number of IFN-γ tests conducted on herds has declined since 2019, reaching a low of 214 in 2022, due to a contemporaneous reduction of OTF-W incidents, and the impact of the change in the mandatory test deployment policy (Figure 5.2). Since 2022, the number of herd tests conducted in the Edge Area has increased slightly each year to 330 in 2025. The percentage of herd tests disclosing at least one IFN-γ test positive animal peaked in 2017 at 76.2% before declining to 64.1% in 2019. Since 2019, the percentage has remained stable, varying between 63.6% (2025) and 68.7% (2022, Figure 5.2).

The annual number of IFN-γ tests conducted on herds in the LRA has stayed consistently low compared to the HRA and Edge Area, between 60 and 130 per year (Figure 5.2). The percentage of herd tests disclosing at least one positive animal peaked in 2017 at 86.7% (Figure 5.2). Since 2018, the percentage of herd tests disclosing at least one IFN-γ test-positive animal followed a similar trend to that observed in the HRA and Edge Area: varying between 55 and 65%, apart from a dip in 2024 to 50.0% (Figure 5.2).

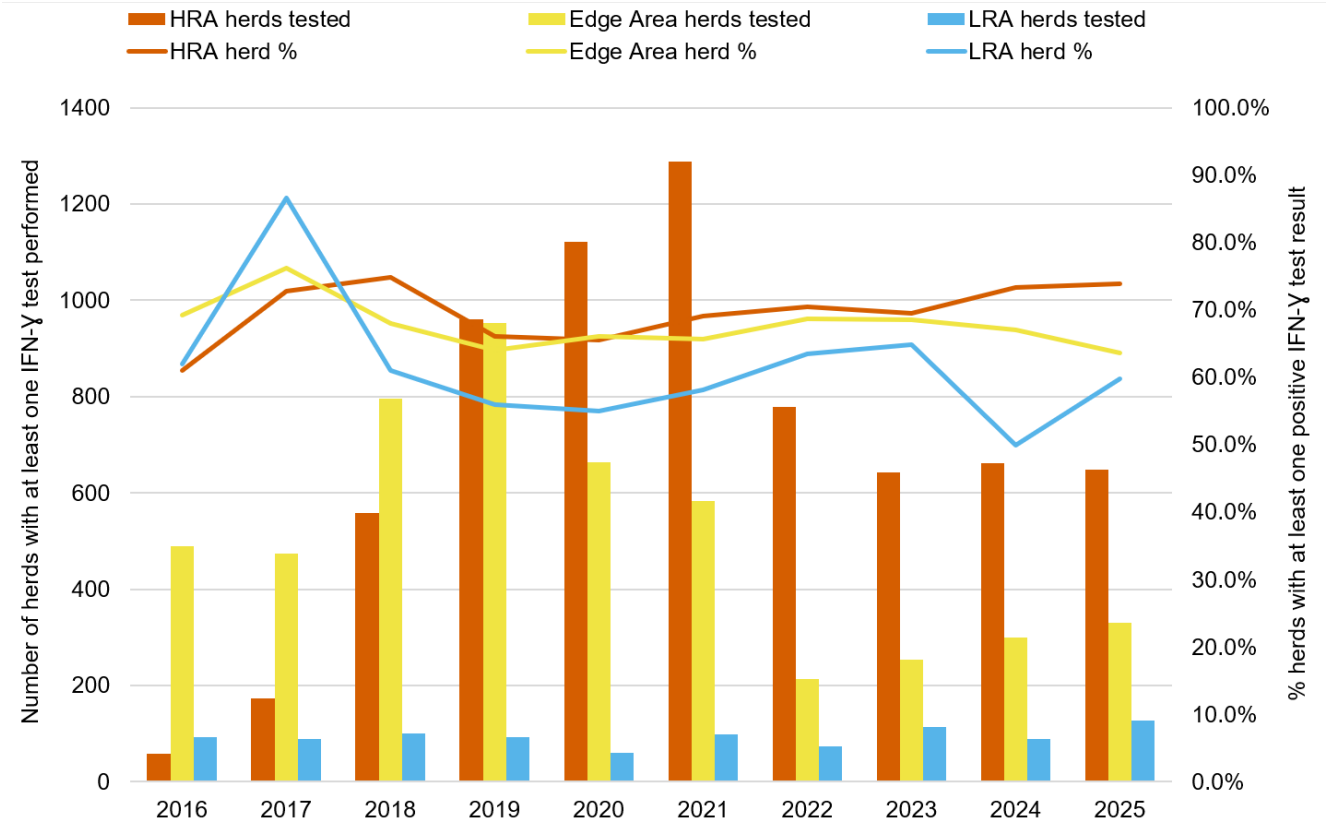


Figure 5.2 Annual number of IFN-γ tests conducted on cattle herds and proportion of these herd tests that disclosed at least one test-positive animal by risk area of England, 2016 to 2025.

Figure 5.2 description: A bar chart displaying the number of IFN-γ tests that were conducted on cattle herds (testing events or occasions) in each risk area for the last 10 years. The red bars represent the number of IFN-γ tests conducted on herds in HRA, the yellow bars represent the Edge Area, and the blue bars represent the LRA. The Y axis for the number of IFN-γ tests conducted on herds is on the left-hand side of the chart. The bar chart is superimposed with a line chart displaying the percentage of the IFN-γ herd tests which disclosed at least one test positive animal. The red line represents the percentage of positive tests in the HRA, the yellow is for the Edge Area and the blue for the LRA. The corresponding axis with the percentage of positive tests is on the right-hand side of the chart.

The pattern observed in the individual counties of the HRA mostly resembles what has been observed in the HRA overall. Since the policy change in 2021, fewer IFN-γ tests were completed each year, but the annual percentage of positive tests has fluctuated between 4% and 7% (Figure 5.3).

Exceptions are Avon, Hereford and Worcester and Shropshire, where the number of IFN-γ tests deployed in 2022 increased compared to 2021 (Figure 5.3). These counties had the highest percentage of OTF-W incidents and the highest percentage

of recurrent incidents and were therefore more affected by the 2021 policy change. However, from 2022 to 2025, the number of IFN-γ tests deployed in these counties seems to have stabilised, in line with the HRA overall (Figure 5.3). Devon has consistently recorded a far higher number of IFN-γ tests deployed than all other HRA counties (Figure 5.3). This is largely a reflection of the considerably greater number of OTF-W incidents recorded annually in Devon compared with other HRA counties (Section 3.2.2).

There was a notable change in 2025 in Cornwall, where the number of tests deployed decreased for the second consecutive year, down to 9,064, a considerable drop from the previous high of 16,137 tests in 2023 (Figure 5.3). This is largely due to the decrease in OTF-W incidents in the county since 2023. There was also a notable change in Gloucestershire, where the number of IFN-γ tests deployed doubled, from 3,897 in 2024 to 7,808 in 2025, despite an accompanying decrease in the number of OTF-W incidents in the county (Figure 5.3). This is largely attributable to a sharp increase in the use of IFN-γ testing in persistently infected OTF-W herds across the county during 2025.

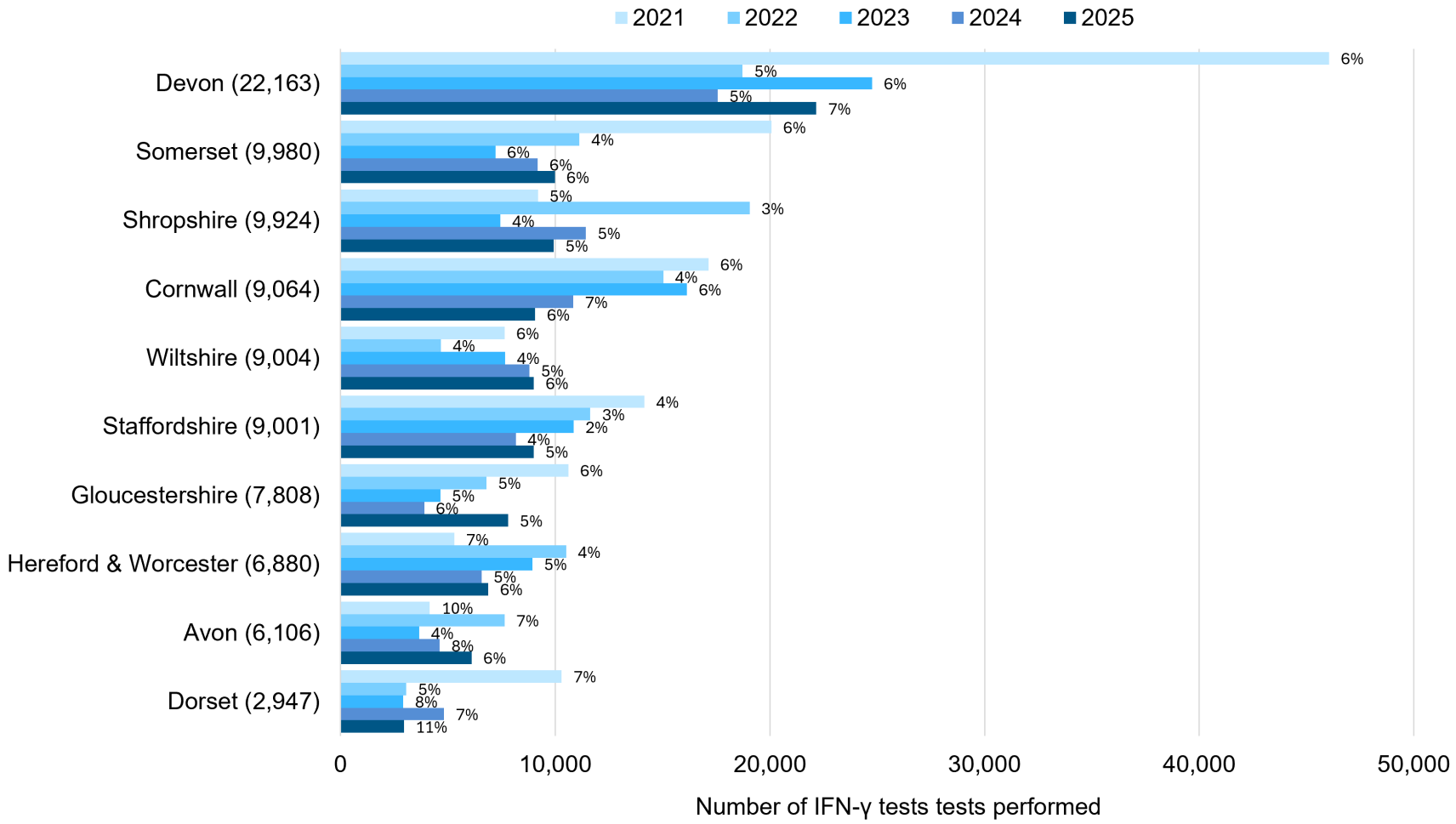


Figure 5.3 Number of IFN-γ tests performed per year in each HRA county between 2021 to 2025. The percentages of tests with a positive result are labelled on the chart at the end of each bar. No IFN-γ tests were conducted in the West Midlands between 2021 and 2024 (there was one negative IFN-γ test in 2025 but is not shown on the chart). The HRA counties are arranged by decreasing number of IFN-γ tests conducted in 2025 (number of IFN-γ tests in parentheses).

6.0 Spatial Epidemiology

6.1 Spatial changes in the TB epidemic

This chapter reports any changes in the spatial distribution of endemic TB areas in England that were observed in 2025 compared to 2024 (see the explanatory supplement for the annual reports 2025 for the definition of endemic TB area and the methodology used to track its expansion and retraction over time).

All new OTF-W incidents detected over a 3-year period (2023 to 2025) were compared by overlapping pairs of years. New OTF-W incidents from 2023 and 2024 were grouped and compared to new OTF-W incidents from 2024 and 2025, to identify changes in each area. Figure 6.1.1 provides a visual depiction of changes to the endemic TB area of England in 2025.

In England as a whole, the area considered endemically infected had spread by approximately 3,706.36 km² in some parts, but contracted by 4,635.42 km² in other parts, resulting in a net overall retraction of 929.06 km^2 since 2023 to 2024. The net change refers to the area for which the rate of spread could be calculated, which does not include a few isolated pockets of endemic TB infection that have appeared but the boundaries of which have not made contact with previous endemic areas.

Overall, the majority of the HRA remained ‘endemically’ infected in 2025, along with parts of the Edge Area, particularly where it borders the HRA, and edging further eastwards towards the LRA at 2 separate locations (HS23 in Southwest Lincolnshire, and HS30 in West Hertfordshire). There were 4 isolated endemic areas within the LRA, located in the north-east of Cumbria (one within HS29), north-west of Cumbria, east Lincolnshire (within HS28) and south-west Lincolnshire where it borders Leicestershire (HS23).

In the HRA, the endemic TB area contracted in parts of the north and south of Cornwall, South Devon, South and West Somerset, North and East Dorset, East and Southwest Wiltshire, East Gloucestershire, Central Herefordshire, North and South Worcestershire and Southwest Shropshire bordering Wales. By contrast, the endemic TB area expanded in the geographic centre of Cornwall, Southwest Devon, South Somerset bordering Dorset, several areas within Dorset, West Avon, Southeast Worcestershire and South and Southeast Staffordshire.

In the Edge Area, areas of retraction were seen in parts of Berkshire, Buckinghamshire, Leicestershire, Nottinghamshire, Oxfordshire, Warwickshire and in the small endemic area in the south of East Sussex. However, the endemic TB area expanded in the west of Berkshire, into the south of Oxfordshire and into the north of Hampshire. Hampshire also experienced spread towards the west into Wiltshire and towards the border with Dorset. Buckinghamshire saw a large area of spread further north of HS30 into Bedfordshire. There were also areas of spread of the endemic TB

area into central Leicestershire and small sections of Warwickshire, Cheshire and Derbyshire.

As seen in previous years, most of the rest of England, particularly the LRA, remained free of endemic infection. Areas previously classified (for a while) as endemic in the north of Lancashire, central North Yorkshire and Southwest Lincolnshire within Hotspot 23 were no longer so after evaluation of 2025 data.

In the LRA, the area of endemic TB infection expanded in the east of Lincolnshire within Hotspot 28 and in the south of Cumbria. There were 2 areas of endemic TB infection within Cumbria. The endemic area in the north of Cumbria saw an area of retraction northwards and an area of spread southwards. The second area of endemic TB infection within Cumbria was located within Hotspot 29 and had an area of retraction northwards and an area of spread south-westwards outside of Hotspot 29. Further details on spread of the endemic TB areas can be found in the LRA and Focus County Reports.

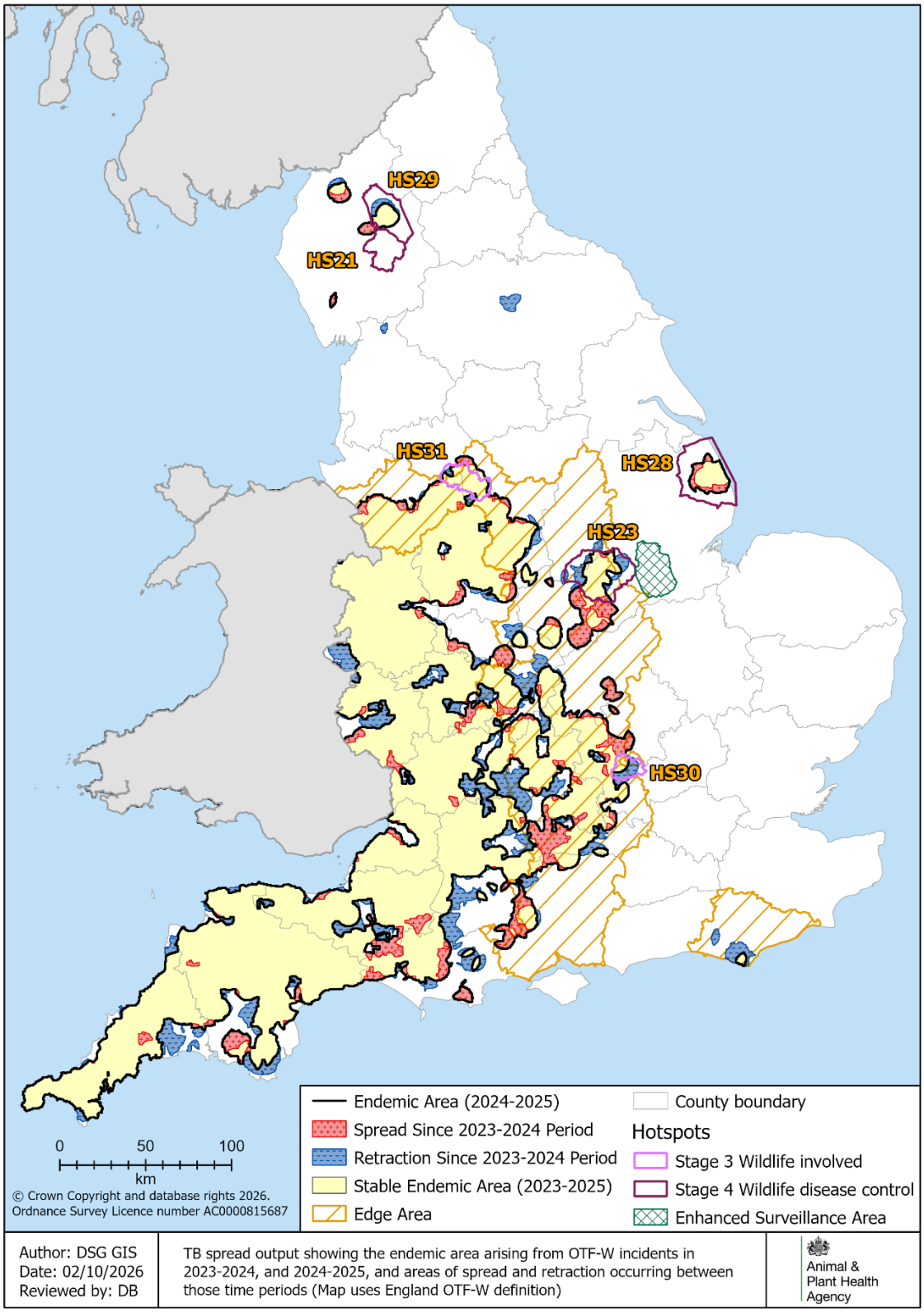


Figure 6.1.1 Spread and retraction of endemic TB areas of England in 2025 compared to 2024. A geographical unit (500 by 500 metre grid cell) was considered endemic if there were at least 3 new OTF-W incidents within a 7 km radius within a 2-year period.

6.2 New areas of endemic infection and new emerging clusters of bovine TB in the Edge Area

The Edge Area is located along the front of endemic TB infection in England and as such, spread and retraction of this front often occurs within Edge Area counties. Several counties exhibited evidence of localised spread, emerging clusters or increasing disease burden during 2025. Areas of expansion and retraction of endemic infection are shown in Figure 6.1.1, whilst county-level trends in incident numbers, incidence rates and prevalence are presented in Figures 3.2.6, 3.4.5 and 3.5.3.

In the Edge Area, areas of retraction were seen in parts of Berkshire, Buckinghamshire, Leicestershire, Nottinghamshire, Oxfordshire, Warwickshire and in the small endemic area in the south of East Sussex.

However, the endemic TB area expanded in the west of Berkshire, into the south of Oxfordshire and into the north of Hampshire. Hampshire also experienced spread towards the west into Wiltshire and towards the border with Dorset. Buckinghamshire saw a large area of spread further north of HS30 into Bedfordshire. There were also areas of spread of the endemic TB area into central Leicestershire and small sections of Warwickshire, Cheshire and Derbyshire.

Some of the epidemiologically significant areas are within the following counties:

- **Berkshire:** There was continued spread of incidents with WGS clade B6-62 from west towards the east of the county into areas of low cattle density, whilst some retraction was seen in other parts. The East Berkshire Area of Concern continues to be monitored and recorded its highest number of new TB incidents since 2019.
- **Buckinghamshire:** Whilst some areas of retraction were seen in parts of the county, multiple clusters remained of epidemiological significance during 2025. The Ackley B6-62 cluster in the north-west of the county continued to expand and included genetically related cattle and wild deer isolates. These were also related to B6-62 infection in neighbouring Northamptonshire. The Buckinghamshire B6-11 cluster comprised a large group of genetically linked incidents within an 8 km radius, whilst the Chinnor-Thame B6-62 cluster remained linked to incidents in neighbouring Oxfordshire and Hotspot 30 in Hertfordshire. Buckinghamshire was chosen as a Focus County of the Edge Area in 2025 and has a detailed epidemiology report accessible by this link.
- **Hampshire:** Although the total number of new TB incidents decreased compared to 2024, end-of-year prevalence increased for the fourth consecutive year. A cluster of 5 incidents associated with WGS clade B6-85 was identified in the central-west of the county and there was also evidence of local spread of clade B6-62 that requires further monitoring. Hampshire

experienced endemic area spread towards the west into Wiltshire and towards the border with Dorset.

- **Leicestershire:** The number of new TB incidents increased for the second consecutive year. B3-11 remained the most frequently identified WGS clade in the county and was the only clade associated with endemic infection. There were 10 incidents associated with B3-11 to the south of the HS23 boundary that were genetically related to the endemic infection within the Leicestershire part of the hotspot. HS23 remained active in 2025, with all 9 OTF-W incidents detected within the hotspot occurring in the Leicestershire portion. Areas of spread of the endemic TB area were also observed into central Leicestershire. Leicestershire was chosen as a Focus County of the Edge Area in 2025 and has a detailed epidemiology report accessible by this link.
- **Northamptonshire:** Similar to recent years, most new TB incidents continued to occur in the south-west of the county. TB has become endemic in this area, with the presence of clade B6-62 expanding across the Warwickshire and Oxfordshire borders into Northamptonshire. The endemic B6-62 infection in south-west Northamptonshire is genetically related to the endemic B6-62 infection in bordering north-west Buckinghamshire.

In addition, **Oxfordshire** continued to experience the highest herd incidence rate in England in 2025 (18.9 per 100 herd-years at risk). The county also recorded a slight increase in new TB incidents and end-of-year prevalence compared to 2024, whilst the incidence rate increased to the second highest recorded in the county and remained the highest of the Edge Area counties in 2025.

6.3 Improved epidemiological indicators of bovine TB in the Edge Area

Although several counties exhibited evidence of localised spread or emerging clusters during 2025, favourable changes in epidemiological indicators were also observed elsewhere in the Edge Area. These included reductions in incident numbers, herd incidence, prevalence and the proportion of OTF-W incidents, together with evidence of endemic area retraction in some locations.

- **Cheshire:** Despite having the highest number of new TB incidents of Edge area counties in 2025, this number continued to decline for the fifth consecutive year, falling from 140 incidents in 2021 to 78 in 2025. The county also recorded a fourth consecutive reduction in herd incidence rate and a statistically significant reduction in end-of-year prevalence compared to 2024.
- **Warwickshire:** The number of new TB incidents, herd incidence rate and end-of-year prevalence all decreased in 2025. Incidence declined for the fourth consecutive year, from 13.1 per 100 herd-years at risk in 2021 to 9.0 in 2025.

- **Derbyshire:** The county recorded a 25% reduction in new TB incidents compared with 2024, despite remaining among the Edge Area counties with the highest number of incidents. The proportion of OTF-W incidents also decreased markedly, from 51% in 2024 to 34% in 2025.
- **East Sussex:** The county recorded the lowest end-of-year prevalence and the lowest proportion of OTF-W incidents (7%) in the Edge Area in 2025. Although total incident numbers increased slightly compared with 2024, the small endemic area in the south of East Sussex also showed retraction.
- **Nottinghamshire:** The number of new TB incidents decreased for the fourth consecutive year, and the county recorded the lowest herd incidence rate in the Edge Area. Areas of retraction in the endemic TB area were also observed in parts of Nottinghamshire.

6.4 New areas of endemic infection and new emerging clusters of bovine TB in the LRA

Areas of developing epidemiological significance in the LRA are also discussed in the LRA Descriptive Epidemiology Reports for 2025, which provide a greater depth of discussion at the local level.

The Low Risk Area continued to experience a low overall burden of bovine TB in 2025. However, several areas exhibited evidence of localised spread, increasing disease burden or emerging clusters requiring continued monitoring. Areas of expansion and retraction of endemic infection are shown in Figure 6.1.1.

- **Lincolnshire:** Lincolnshire continued to record the highest incidence rate and prevalence in the Low Risk Area. HS28 remained the principal focus of bovine TB in the county and evidence of expansion of the endemic TB area was observed in eastern Lincolnshire.
- **Cumbria:** Areas of endemic infection continued to evolve in Cumbria, including evidence of expansion in parts of the county. Multiple areas of concern remained under monitoring and investigation.
- **Greater Manchester:** Hotspot 31 (HS31) was established in 2025 following detection of a cluster of incidents associated with WGS clade B3-11. The hotspot spans parts of Greater Manchester, Cheshire and Derbyshire and represents a newly identified area requiring enhanced measures.
- **Central North Yorkshire:** This area remained under close monitoring following repeated OTF-W incidents and the continued detection of multiple WGS clades.

- **South East region:** An area spanning southern Kent, eastern Surrey and West Sussex experienced an increase in OTF-W incidents during 2025 and was identified as requiring continued monitoring.

6.5 Improved epidemiological indicators of bovine TB in the LRA

Although several areas exhibited evidence of localised spread or emerging clusters during 2025, favourable changes in epidemiological indicators were also observed elsewhere in the Low Risk Area. These included reductions in incident numbers, OTF-W incidents and disease burden within several regions and hotspot areas. Relevant trends are shown in Figures 3.2.7, 3.4.6 and 3.5.4.

- **North East region:** The North East recorded only 3 new TB incidents in 2025, compared with 9 in 2024, and no OTF-W incidents were detected during the year.
- **North West region:** The region continued to maintain a low burden of disease, with only one OTF-W incident detected during 2025. The number of reactors removed also declined substantially compared with 2024.
- **Cumbria (HS29):** HS29 recorded no new OTF-W incidents during 2025 and experienced a substantial reduction in incident numbers compared with previous years.
- **Cumbria (HS21):** No OTF-W incidents were detected in HS21 during 2025, representing the third consecutive year without an OTF-W incident.

7.0 M. bovis whole genome sequencing clades

APHA attempts to recover M. bovis from all new TB incidents and to submit at least one isolate per PCR and culture-positive incident for whole genome sequencing (WGS). In 2025, 477 additional M. bovis isolates from incidents with multiple isolates were characterised by WGS.

A clade is a group of genetically related isolates, based on similarities between their whole genome sequences. The combination of infected herd location and clade detection frequency can be used to describe geographical areas in England where particular clades are commonly isolated (or endemic), known as ‘homerange.’ Maps displaying the homeranges of WGS clades can be found in the GB Data Report.

From TB incidents which began in 2025, there were 1,281 cattle M. bovis isolates categorised by WGS clade across 804 TB incidents, representing 25 different clades. Of the 1,265 isolates with a clade for which a homerange exists, 77.4% (992) were from incident herds located within the homerange of the relevant clade.

The WGS clades of M. bovis most frequently recovered from cattle herds were B6-11 and B6-85, of which more than 80% were found within the usual homerange for

these clades (Table 7.1). WGS clades B6-62 and B3-11 were also frequently recovered, but a lower proportion of these (76.2% and 76.8%, respectively) were within homerange. Clades B6-13 and B6-14 had a low proportion of isolates identified in cattle herds within homerange (50% and 14.3%, respectively). However, the total number of isolates per clade was small (20 and 14 isolates, respectively).

Six WGS clades (16 isolates) detected in 2025 did not have an established homerange in England, namely: B6-84, B6-31, B6-23, B6-82, B5-11 and B6-22, all of which had between one and 6 isolates.

Table 7.1 Whole genome sequence (WGS) clades of M. bovis recovered from new cattle TB incidents in 2025.

WGS clade	No. of samples	No. of samples in homerange	No of samples outside of homerange	Percentage of samples within homerange
B6-11	274	223	51	81.4
B6-85	223	196	27	87.9
B6-62	189	144	45	76.2
B3-11	185	142	43	76.8
B6-42	73	58	15	79.5
B4-11	58	47	11	81.0
B6-83	52	43	9	82.7
B1-11	44	33	11	75.0
B6-51	32	19	13	59.4
B6-52	22	21	1	95.5
B6-87	21	16	5	76.2
B6-13	20	10	10	50.0
B6-91	19	10	9	52.6
B2-11	14	11	3	78.6
B6-14	14	2	12	14.3
B6-41	11	7	4	63.6
B6-15	8	6	2	75.0
B6-71	3	2	1	66.7
B6-16	3	2	1	66.7
Other (clades without a homerange)	16	-	-	-
Total	1,281	992	273	-

8.0 Attribution of sources of infection for new TB incident herds

Understanding how M. bovis infection is introduced into cattle herds is important for informing disease control policy and identifying preventive measures that may reduce the risk of future TB incidents for the affected herd. However, establishing the source and route of infection can be challenging because bovine TB is a chronic disease with a long and variable incubation period, and infection may not be detected until months or years after it was introduced into a herd.

This chapter presents 2 complementary approaches used to assess the likely source and route of infection for new TB incidents in England.

The first is based on veterinary investigations (using Disease Report Forms or 'DRFs'), which draw upon epidemiological evidence, farm-specific information, local knowledge and veterinary judgement to assess likely infection pathways.

In the LRA and Edge Area, all TB incidents are investigated using the Disease Report Form (DRF). In the HRA, one third of new breakdowns are randomly selected for a DRF investigation. In addition, HRA incidents meeting specified disease severity or public health criteria are selected for case management purposes.

Results are shown in section 8.1 for the HRA and Edge Area. Equivalent data for the LRA can be found in the Year End Descriptive LRA Epidemiology Reports.

The second uses data-driven methods that apply standardised criteria to routinely collected surveillance, cattle movement and whole genome sequencing (WGS) data to assess evidence supporting specific infection pathways. Results are shown in section 8.2 for the HRA, Edge Area and LRA.

The data-driven methods are intended to complement existing veterinary investigations rather than replace them. Veterinary investigations incorporate local epidemiological knowledge, herd management information, biosecurity assessments and professional judgement that cannot be fully captured within automated analyses. Conversely, the data-driven methods provide a consistent and reproducible assessment of selected infection pathways across all eligible incidents using structured surveillance, movement and genomic data. Together, these approaches provide complementary evidence that can improve understanding of the epidemiology of bovine TB at both herd and population level.

Neither approach can determine the definitive source of infection for most TB incidents. Rather, both seek to identify infection pathways that are most consistent with the available evidence at the time of assessment. Consequently, the results presented in this chapter should be interpreted as assessments of likely infection pathways rather than confirmation of the true source of infection.

8.1 Disease Report Forms in the HRA and Edge Area

In 2025, 241 out of 1,622 (15%) new TB incidents in the HRA and 300 out of 405 (74%) in the Edge Area received a preliminary or final APHA veterinary investigation (Disease Report Form or 'DRF').

These veterinary investigations seek to identify the infection risk pathways most consistent with the available evidence for a TB incident. Investigators may record up to 3 plausible infection pathways for an incident and assign a likelihood (possible, likely, most likely or definite) to each, based on the available epidemiological information and professional judgement.

Details of the protocol used for these investigations, and the subsequent methodology used to calculate the weighted contribution of the different suspected sources of M. bovis infection shown in Tables 8.1.1 and 8.1.2 can be found in the explanatory supplement for the annual reports 2025.

Tables 8.1.1 and 8.1.2 show the calculated weighted contribution of suspected sources of M. bovis infection identified through APHA veterinary investigations of new TB incidents in 2025 in the HRA and Edge Area, respectively. The results reflect both the infection risk pathways selected during investigations and the likelihood assigned to each pathway.

In the HRA, investigation coverage varied between counties, ranging from 3% of new incidents in Dorset to 37% in Staffordshire (Table 8.1.1). Coverage was higher in the Edge Area, but also varied between counties, ranging from 46% in Hampshire to 100% in Northamptonshire (Table 8.1.2). The level of coverage should be considered when interpreting county-level differences.

Apart from Shropshire, the infection risk pathway with the highest weighted contribution across all HRA counties was potential exposure to infected badgers, ranging from 23.6% in Shropshire to 74.8% in Hereford and Worcester (Table 8.1.1). Apart from Nottinghamshire, this was also the case in the Edge Area, where the weighted contribution varied between 28.8% in Hampshire and 68.5% in Cheshire (Table 8.1.2). The estimates for Hereford and Worcester, Dorset and Nottinghamshire should be interpreted cautiously because they were based on only a small number of completed investigations.

Potential exposure to other infected wildlife, primarily wild deer, also featured consistently in veterinary investigations in the HRA and Edge Area, with the weighted contribution varying between counties. In the HRA weighted contribution ranged from 0% in Dorset to 27.6% in Devon, and in the Edge Area from 1.8% in Oxfordshire to 20.2% in Hampshire (Tables 8.1.1 and 8.1.2).

In the HRA, the movement of undetected infected cattle was the infection risk pathway with the highest weighted contribution in Shropshire. Across HRA counties, its weighted contribution ranged from 0% in Gloucestershire to 28.9% in

Staffordshire (Table 8.1.1). In the Edge Area, this infection risk pathway had the highest weighted contribution in Nottinghamshire and was also particularly important in Leicestershire and Oxfordshire (Table 8.1.2). Unlike in the HRA, the weighted contribution of this pathway exceeded 10% in all Edge Area counties, ranging from 11.1% in East Sussex to 46.5% in Nottinghamshire (Table 8.1.2).

Residual infection had a weighted contribution greater than 10% in 8 of the 10 HRA counties, with the highest contribution in Dorset (22.2%) and Wiltshire (21.2%), and the lowest contribution in Cornwall (1.3%, Table 8.1.1). In contrast, residual infection had a weighted contribution greater than 10% in only 3 of the 11 Edge Area counties, with the highest contribution in Warwickshire (25.5%) and lowest in East Sussex (2.2%, Table 8.1.2).

Contiguous cattle infection had a low weighted contribution across all HRA and Edge Area counties, with a maximum contribution of 5.4% in Gloucestershire in the HRA and 7.1% in Hampshire in the Edge Area (Tables 8.1.1 and 8.1.2). Similarly, very few veterinary investigations identified exposure via fomites or domestic animals as likely infection risk pathways (Tables 8.1.1 and 8.1.2).

There was a degree of uncertainty around the source of some new incidents. In the HRA, the weighted contribution assigned to "other or unknown" sources ranged from zero in Hereford and Worcester and Shropshire to 20.8% in Avon (Table 8.1.1). Similarly, in the Edge Area, the contribution of “other or unknown” sources ranged from 1.1% in Derbyshire to 27.8% in Northamptonshire (Table 8.1.2). For the purpose of reflecting uncertainty in the overall picture, this pathway may be ascribed additional weighting where there is low certainty (such as ‘possible’ or ‘likely’) within other pathways.

Table 8.1.1 The weighted contribution of suspected sources of M. bovis infection for new TB incidents in the HRA in 2025 from Disease Report Forms completed during veterinary investigations. West Midlands did not have any veterinary investigations carried out in 2025 and is therefore not shown.

County	Badgers	Cattle movement	Contiguous	Residual cattle infection	Domestic animals	Non-specific reactor	Fomites	Other wildlife	Other or unknown source*	No. of DRFs completed (% of all new incidents in 2025)
Avon	45.9%	3.3%	0.0%	12.6%	0.0%	0.0%	0.0%	17.3%	20.8%	8 (9%)
Cornwall	73.9%	5.8%	0.3%	1.3%	0.0%	0.0%	0.0%	5.4%	13.2%	72 (32%)
Devon	36.1%	11.2%	0.0%	17.8%	0.0%	0.0%	0.3%	27.6%	6.9%	51 (12%)
Dorset	50.0%	11.1%	0.0%	22.2%	0.0%	0.0%	0.0%	0.0%	16.7%	3 (3%)
Gloucestershire	56.6%	0.0%	5.4%	12.8%	0.0%	0.8%	0.0%	12.4%	12.1%	16 (17%)
Hereford and Worcester	74.8%	2.1%	0.0%	3.0%	0.0%	0.0%	0.0%	20.1%	0.0%	6 (4%)
Shropshire	23.6%	26.7%	0.0%	15.3%	7.8%	0.0%	5.7%	21.0%	0.0%	6 (4%)
Somerset	28.3%	23.2%	0.0%	18.5%	0.0%	0.0%	0.0%	16.4%	13.6%	10 (6%)
Staffordshire	47.1%	28.9%	0.6%	17.3%	0.0%	0.0%	0.2%	2.3%	3.6%	46 (37%)
Wiltshire	52.7%	0.7%	1.3%	21.2%	0.0%	0.0%	0.0%	15.4%	8.7%	23 (18%)
HRA	**53.3%**	**11.6%**	**0.7%**	**12.3%**	**0.2%**	**0.1%**	**0.2%**	**12.5%**	**9.2%**	**241 (15%)**

* For the purpose of reflecting uncertainty in the overall picture, this pathway may be ascribed additional weighting where there is low certainty (such as ‘possible’ or ‘likely’) within other pathways.

Table 8.1.2 The weighted contribution of suspected sources of M. bovis infection for new TB incidents in the Edge Area in 2025 from Disease Report Forms completed during veterinary investigations.

County	Badgers	Cattle movement	Contiguous	Residual cattle infection	Domestic animals	Non-specific reactor	Fomites	Other wildlife	Other or unknown source*	No. of DRFs completed (% of all new incidents in 2025)
East Sussex	49.8%	11.1%	0.0%	2.2%	0.0%	11.9%	1.3%	14.7%	9.0%	13 (93%)
Derbyshire	55.4%	16.8%	2.7%	12.3%	0.0%	0.0%	0.2%	11.5%	1.1%	46 (72%)
Leicestershire	41.6%	30.8%	2.6%	8.7%	0.3%	0.0%	2.3%	2.5%	11.1%	39 (78%)
Northamptonshire	30.4%	15.5%	2.6%	12.0%	0.0%	0.9%	1.7%	9.0%	27.8%	18 (100%)
Buckinghamshire	53.5%	18.4%	0.0%	8.4%	0.0%	0.0%	0.8%	8.1%	10.8%	20 (63%)
Cheshire	68.5%	13.0%	1.1%	9.7%	0.0%	0.0%	2.2%	3.8%	1.6%	68 (87%)
Nottinghamshire	29.2%	46.5%	0.0%	2.8%	0.0%	0.0%	2.1%	5.6%	13.9%	6 (75%)
Warwickshire	37.0%	24.2%	0.0%	25.5%	0.9%	0.0%	0.5%	4.3%	7.6%	33 (94%)
Oxfordshire	49.6%	36.1%	1.1%	9.4%	0.0%	0.0%	0.0%	1.8%	2.0%	33 (52%)
Berkshire	51.8%	18.1%	0.0%	9.0%	0.0%	0.0%	0.0%	11.3%	9.7%	12 (71%)
Hampshire	28.8%	22.8%	7.1%	8.6%	0.0%	0.0%	0.0%	20.2%	12.5%	12 (46%)
Edge Area	**50.3%**	**21.4%**	**1.6%**	**11.2%**	**0.1%**	**0.6%**	**1.2%**	**6.7%**	**7.0%**	**300 (74%)**

* For the purpose of reflecting uncertainty in the overall picture, this pathway may be ascribed additional weighting where there is low certainty (such as ‘possible’ or ‘likely’) within other pathways

8.2 Data driven methods.

8.2.1 Methodology

Data-driven methods have been developed by APHA to complement veterinary investigations by providing a standardised assessment of infection pathways for new TB incidents.

Three independent algorithms were used to assess infection pathways:

- the Cattle Movement Algorithm (CMA), which assesses the likelihood (from negligible to very high) that infection may have been introduced through the movement of undetected infected cattle into a herd.
- the Residual Infection Algorithm (RIA), which assesses the likelihood of residual infection remaining within a herd from a previous incident, and
- the Local Infection Indicator (LII), which identifies evidence of local transmission by comparing M. bovis WGS data from incident herds with genetically related isolates occurring within defined spatial and temporal windows.

The outputs of these methods are combined to identify infection pathways that are most strongly supported by the available evidence and to provide insights into the epidemiology of bovine TB at herd, county and risk-area level.

A full description of the methodology of these algorithms can be found in the explanatory supplement for the annual reports 2025. The key steps of the methodology, together with the resulting assessment outcomes, are illustrated in Figure 8.2.1.

Whilst herd and animal-level TB histories and cattle movement data can be extracted for every herd, WGS data are only available for OTF-W incidents where M. bovis could be isolated and the resulting genetic sequence (WGS data) was of a sufficient quality for analysis. Therefore, infection pathways for OTF-S incidents, and for OTF-W incidents without WGS data, were analysed using the Cattle Movement Algorithm (CMA) and Residual Infection Algorithm alone.

In 2025, WGS data was available from 800 (85.7%) of the new OTF-W incidents detected in England. By risk area, WGS data was available for 600 (85.1%) of the new OTF-W incidents in the HRA, 167 (88.4%) in the Edge Area, and 33 (84.6%) in the LRA.

There is always a variable degree of uncertainty about the estimated true routes of TB infection into a herd. The absence of a local transmission of infection event or cattle movements associated with a high likelihood of infection does not completely negate these pathways. Nonetheless, the combined evidence from cattle movement, residual infection, and WGS data can provide valuable insights into the possible risk

pathways at a county and risk area level, as well as to APHA veterinarians for case management at herd level.

Tables 10.1.1 to 10.1.3 in Appendix 1 display the source attribution results, derived using the data-driven methods described above, for each new TB incident in England in 2025, by risk area and county.

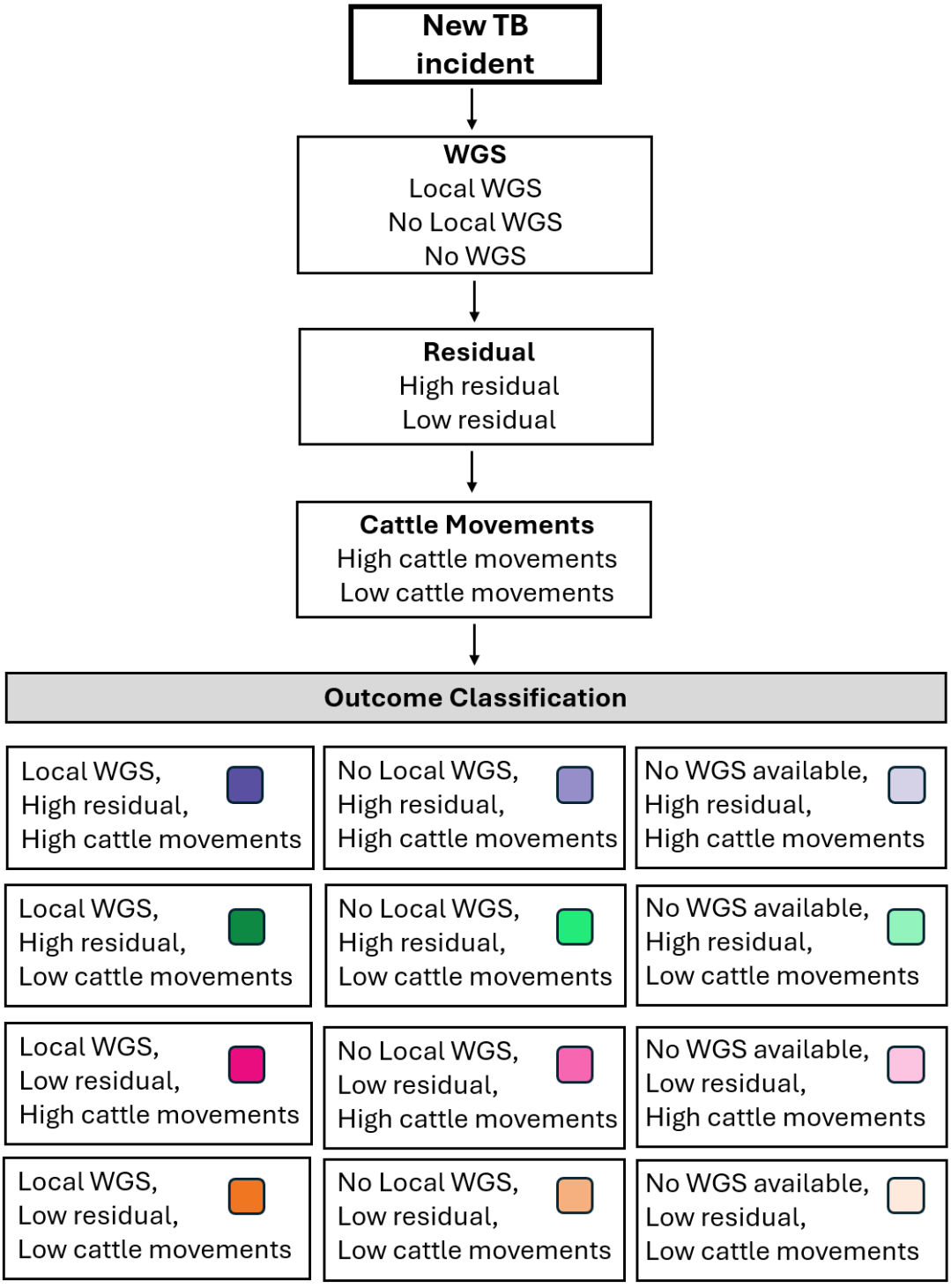


Figure 8.2.1: Diagram detailing the classification of new TB incidents according to the 3 data-driven algorithms (Local Infection Indicator, Residual Infection Algorithm

and Cattle Movement Algorithm). The resulting 12 possible outcomes of the analysis (source attribution categories) are displayed with their accompanying colours, corresponding to those in Figure 8.2.2.

8.2.2 Results of data-driven assessment of infection pathways in OTF-W incidents

The results presented below describe the combinations of evidence identified by the Cattle Movement Algorithm (CMA), Residual Infection Algorithm (RIA) and the Local Infection Indicator (LII). These outputs do not determine the definitive source of infection for individual incidents. Rather, they identify infection pathways that are most strongly supported by the available evidence.

Local transmission pathways (darkest orange, Figure 8.2.2)

Other local transmission pathways, including direct or indirect contact with infected wildlife, contiguous contact with infected cattle, or indirect transmission via fomites, were assessed as the most likely infection pathways for 202 (29%) OTF-W incidents in the HRA, 65 (34%) in the Edge Area and 6 (15%) in the LRA. Available evidence indicated there was:

- strong evidence of a local transmission event identified by WGS (LII)
- a low likelihood of residual infection (RIA), and
- a low likelihood of cattle movements as the source of infection (CMA)

Cattle movements (mid pink, pale pink, Figure 8.2.2)

Introduction of infection through cattle movements was assessed as the most likely source of infection for 79 (11%) OTF-W incidents in the HRA, 27 (14%) OTF-W incidents in the Edge Area and 11 (28%) OTF-W incidents in the LRA (Figure 8.2.2). Available evidence indicated:

- a high likelihood of cattle movements as the source of infection (CMA)
- a low likelihood of residual infection (RIA)
- no evidence of a local transmission event identified by WGS (LII), or no WGS available.

Residual infection (dark green, mid green, pale green, Figure 8.2.2)

Residual infection remaining undisclosed within the herd from a previous TB incident was assessed as the most likely source of infection for 90 (13%) OTF-W incidents in the HRA in 2025 and 21 (11%) in the Edge Area. Available evidence indicated:

- a high likelihood of residual infection (RIA)
- a low likelihood of cattle movements as a source of infection (CMA), and
- either strong evidence of a local transmission event identified by WGS, or no evidence of a local transmission event detected (LII), or no WGS available.

Other local infection pathways, such as contiguous contact with infected cattle or direct or indirect contact with infected wildlife, cannot be completely ruled out for these incidents.

Mixed evidence (darkest pink, mid purple, pale purple, darkest purple, Figure 8.2.2)

For 53 (7%) OTF-W incidents in the HRA in 2025, 16 (8%) in the Edge Area and 2 (5%) in the LRA, the available evidence was consistent with multiple competing infection pathways and did not permit attribution to a single source of infection. Available evidence indicated there was:

- a low likelihood of residual infection (RIA)
- a high likelihood of cattle movements as the source of infection (CMA), and
- strong evidence of a local transmission event detected by WGS (LII)

Limited evidence (mid orange, pale orange, Figure 8.2.2)

For 281 (40%) OTF-W incidents in the HRA in 2025, 60 (32%) in the Edge Area and 20 (51%) in the LRA there was insufficient evidence to indicate a particular pathway. Available evidence indicated there was:

- a low likelihood of residual infection (RIA)
- a low likelihood of cattle movements as a source of infection (CMA)
- no evidence of a local transmission event (LII), or no WGS data available

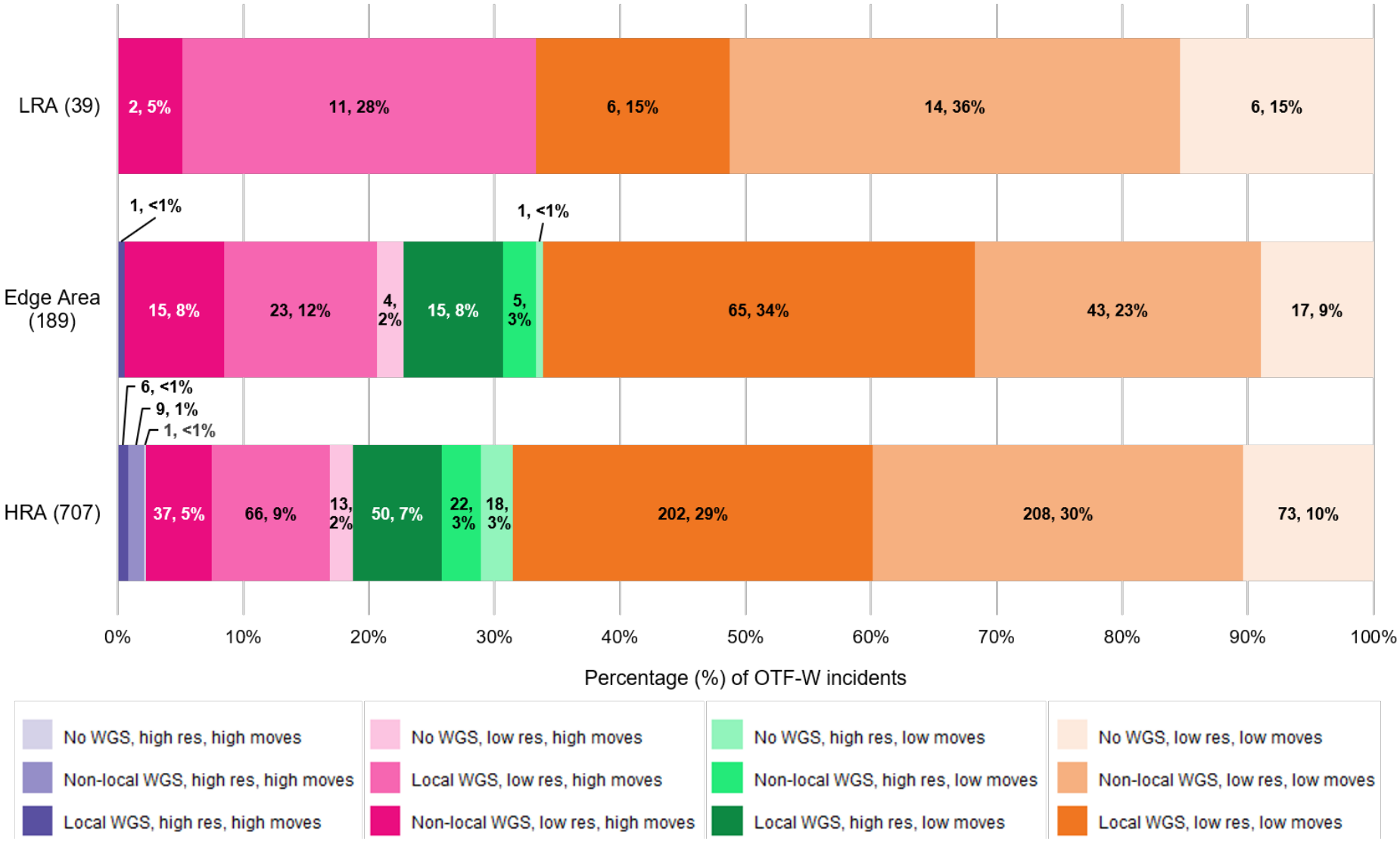


Figure 8.2.2 Source attribution categories of the Local Infection Indicator, Residual Infection Algorithm and Cattle Movement Algorithm, for all new OTF-W incidents in 2025, by risk area. Segments are labelled with the number of incidents and percentage of total OTF-W incidents within each risk area. Total OTF-W incidents per risk area are shown in parentheses. Note: in the legend 'res' is an abbreviation of residual and 'moves' is an abbreviation of cattle movements.

8.2.3 Results of OTF-S incidents

Over half of the new TB incidents disclosed in England in 2025 were OTF-S (1,197 incidents, 56%). Of these, 917 (77%) were in the HRA, 216 (18%) were in the Edge Area and 64 (5%) were in the LRA.

In the absence of WGS data, the cattle movement and TB testing history of these incident herds was only assessed using the Cattle Movement Algorithm (CMA) and Residual Infection Algorithm (RIA), respectively, to identify evidence consistent with infection entering the herd through cattle movements or residual cattle infection remaining in the herd from a previous incident.

As WGS data were not available for OTF-S incidents, local transmission pathways could not be assessed using the LII. Consequently, local infection pathways such as contact with infected wildlife, contiguous infected cattle herds, or indirect transmission via fomites cannot be ruled out for any of the incidents in the categories described below.

Cattle movements

In 2025 in the HRA and Edge Area, introduction of infection through cattle movements was assessed as the most likely source of infection in 98 (11%) and 23 (11%) OTF-S incidents respectively. In the LRA, the percentage was slightly higher (22%, 14 incidents). Available evidence indicated there was:

- a high likelihood of cattle movements as the source of infection (CMA)
- a low likelihood of residual infection (RIA)

Residual infection

For 144 (16%) OTF-S incidents in the HRA in 2025, 38 (18%) in the Edge Area, and 3 (5%) in the LRA residual infection remaining undisclosed within the herd from a previous TB incident was assessed as the most likely source of infection. Available evidence indicated there was:

- a high likelihood of residual infection
- a low likelihood of undetected infected cattle movements as a source of infection.

Mixed evidence

For 5 (1%) OTF-S incidents in the HRA in 2025, and 3 (1%) in the Edge Area the available evidence was consistent with competing infection pathways and did not permit attribution to a single source of infection. There were no such OTF-S incidents in the LRA. Available evidence indicated there was:

- a high likelihood of residual cattle infection, and
- a high likelihood of cattle movements as the source of infection

Limited evidence

For the majority of new OTF-S incidents starting in England in 2025 there was insufficient evidence to indicate a particular pathway. This was 73% in the HRA (670 OTF-S incidents), 70% in the Edge Area (152 OTF-S incidents), and 73% in the LRA (47 OTF-S incidents). Available evidence indicated there was:

- a low likelihood of residual infection, and
- a low likelihood of cattle movements as a source of infection

9.0 Risk factors for TB herd incidents

Four key factors available from surveillance data (herd size, herd type, risk area and TB history) were explored for their association with the risk of a herd having a new TB incident in England in 2025, the duration of incidents ending in 2025, and the risk of a herd experiencing a recurrent incident.

The analyses presented in this chapter identify statistical associations between herd characteristics and TB outcomes. As these are observational analyses, the findings should not be interpreted as evidence of direct causation. While the models adjust for key factors including herd size, herd type, risk area and TB history, other factors known to influence bovine TB risk, including local disease pressure, wildlife reservoirs, cattle trading practices and farm-level management factors, were not included in the models and may partially explain the observed associations.

Some analyses, particularly those relating to the LRA and smaller herd subgroups, are based on relatively small numbers of incidents. Consequently, estimates may be subject to greater year-to-year variation and statistical uncertainty. Findings should therefore be interpreted alongside the associated confidence intervals.

9.1 Risk factors associated with the duration of TB incidents.

In the HRA and Edge Area, as the duration of TB incidents ending in 2025 increased, the proportion of large herds (>200 cattle) within the longer incident duration categories also increased (Figure 9.1.1). In the LRA, the 2 longest incident duration categories (241-550 and ≥551 days) were also dominated by large herds. However, unlike in the HRA and Edge Area, the shortest incident duration category in the LRA was also predominantly composed of large herds. This observation should be interpreted with caution given the relatively small number of incidents recorded in the LRA compared with the HRA and Edge Area.

Persistent herd incidents are defined as those lasting more than 550 days. As shown in Figure 9.1.1, the predominant herd size in this category were those with more than 200 cattle across all risk areas.

The association between herd size and incident duration may reflect a range of factors, including difficulties in removing all the infected animals in larger herds due to limitations in the sensitivity of antemortem diagnostic tests, the increased opportunity for cattle to cattle transmission in large herds, as well as the potential for more cattle contacts with local sources of infection on the farm or in neighbouring herds.

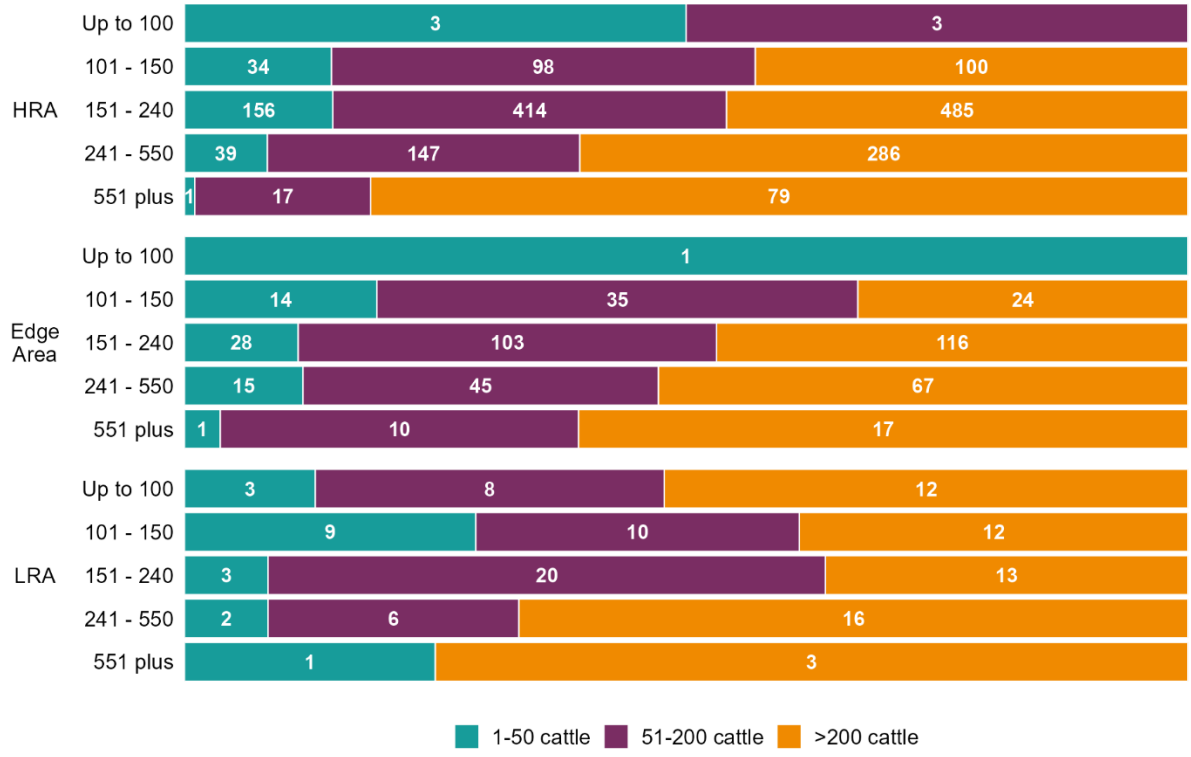


Figure 9.1.1 Comparative duration of TB incidents (in days) that ended in 2025, by risk area and herd size category.

Figure 9.1.1 description: A stacked bar chart showing the duration of TB incidents that ended in 2025 by risk area and herd size. Small herds of one to 50 cattle are represented by the light green bars; medium size herds of 51 to 200 cattle are represented by the purple bars and large herds of greater than 200 cattle are represented by the orange bars. The labels within each bar represent the number of TB incidents which ended in 2025 in each herd size category per risk area, and the length of each bar is proportional to the percentage of herds in each size category for each combination of incident duration range and bovine TB risk area.

9.2 Risk factors associated with incidence rate.

Similarly to the duration of TB incidents, as herd size increased, the incidence rate of a new TB incident in 2025 also increased. The largest herds, with over 300 cattle, had an incidence rate of 20.5 new TB incidents per 100 HYR in 2025. In comparison,

for herds with fewer than 50 cattle, the incidence rate was between 1.1 and 3.0 new TB incidents per 100 HYR.

Herds in the HRA experienced just under twice as many TB incidents per 100 HYR compared to those in the Edge Area (12.1 versus 6.9, respectively), and over 13 times more than those in the LRA (0.9 per 100 HYR, Figure 9.2.1).

Dairy herds experienced a higher rate of new TB incidents in 2025 (15.6 per 100 HYR) in comparison to beef (4.9 per 100 HYR) or other herd types (3.8 per 100 HYR). Dairy herds tend to be larger than beef herds and are more often situated in the west of England, within the HRA.

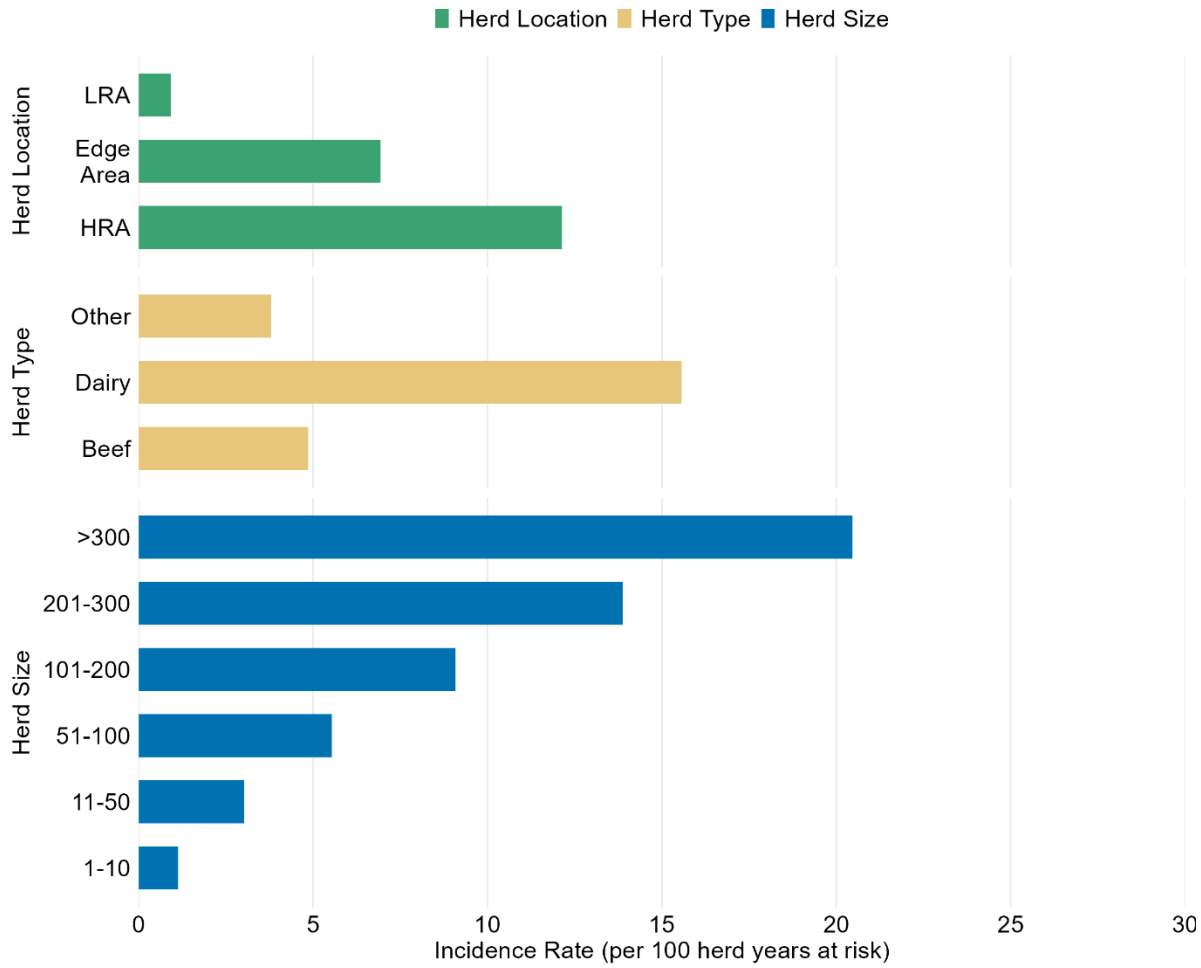


Figure 9.2.1 Incidence rates (unadjusted) for new TB incidents in herds of different size and type, in each risk area of England in 2025.

Figure 9.2.1 description: Bar chart showing the unadjusted incidence rates for new TB incidents in herds of different size and production type, in each risk area of England in 2025. As herd size increased, the incident rate also increased, suggesting that larger herds are at an increased risk of TB. As expected, herds located in the HRA had a higher incidence rate compared to the Edge Area and LRA. Dairy herds had the highest incidence rate compared to beef and 'other' herds. For a

description of the holding types included in the ‘other’ category, please see the explanatory supplement for the annual reports 2025.

The effects of herd size, type and location were further explored by comparing incident rate ratios (IRR), which describe the comparative proportion of herds in each category that experience a TB incident (Figure 9.2.2). Herds in the Edge Area were 43% less likely to experience a new TB incident in 2025 (unadjusted IRR = 0.57, 95% CI 0.51 to 0.63) than herds in the HRA. As expected, in 2025 herds in the LRA were 92% less likely to experience a new TB incident (unadjusted IRR = 0.08, 95% confidence interval (CI) 0.06 to 0.09) compared to herds in the HRA. When adjusted for herd size and herd type, there was little difference between the unadjusted and adjusted IRR, suggesting that these factors did not influence the association between incidence and herd location.

As herd size increased, the IRR also increased. Herds containing 11 to 50 cattle were 85% less likely to experience a new TB incident in 2025 compared to herds with >300 cattle (unadjusted IRR = 0.15, 95% CI 0.13 to 0.17, p<0.001). Again, there was little difference between the unadjusted and adjusted IRR, suggesting that other factors (TB risk area and herd type) did not influence the association between herd size and TB risk (Figure 9.2.2).

In comparison to beef herds, dairy herds were over 3 times more likely to experience a new TB incident in 2025 (unadjusted IRR 3.22, 95% CI 2.95 to 3.51). By contrast, when adjusted for risk area and herd size, the IRR for dairy herds was reduced to 1.49, but remained significantly higher than for beef herds (95% CI 1.35-1.65, p<0.001). This suggests that although dairy herds tend to be larger than beef herds, and are more commonly found in the HRA, there are likely to be other characteristics of dairy herds associated with the observed higher incidence of new TB incidents that were not explored in this analysis. The risk of a new TB incident in 2025 in herds categorised as ‘Other’ was not significantly different compared to beef herds (unadjusted IRR 0.71, 95% CI 0.44-1.09, p=0.146).

Other factors, not explored in this report, are also important in the epidemiology of TB in cattle herds, such as the existing prevalence of infection in the local cattle population, the presence of a local reservoir of M. bovis infection in wildlife (particularly badgers), the extent of shared farm boundaries and the potential for the herd to be infected by fomites (Broughan et al. 2016).

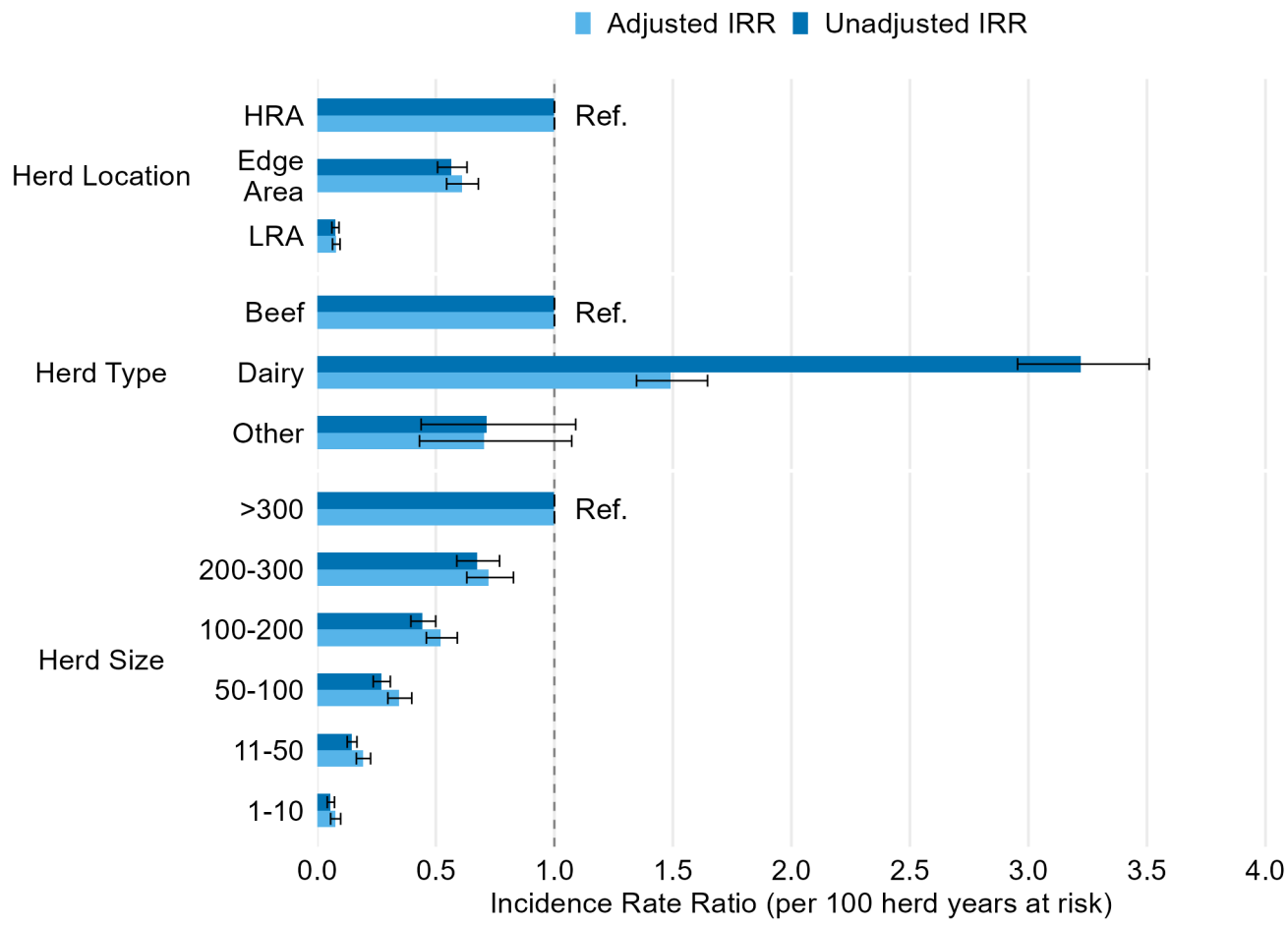


Figure 9.2.2 Incident Rate Ratios (IRR, Unadjusted and Adjusted) for new TB incidents (OTF-W and OTF-S) in herds of different size and type, by risk area of England in 2025. The “Ref.” acronym refers to the reference category used when calculating the IRR. Error bars shown represent the 95% confidence interval for the IRR.

Figure 9.2.2 description: Bar chart displaying the results of a Poisson regression model, where the Incidence rate ratio (IRR) is calculated relative to a reference category. This output of the model is unadjusted and is represented by the dark blue bars. The results of the adjusted model are represented by the light blue bars. The adjusted model shows that even after taking account of herd size and location, dairy herds in England are 49% more likely to have a TB incident compared to beef herds (adjusted IRR= 1.49, 95% CI 1.35-1.65, p<0.001). The Poisson regression analysis used to calculate the IRRs used aggregated time-at-risk data which aggregates the risk for herds that have had multiple whole herd tests in each year. The time at risk (denominator) is slightly higher overall for the aggregated dataset (Figure 9.2.2) than the non-aggregated dataset (Figure 9.2.1). This results in slightly lower incidence rates. For more details about the Poisson analysis, see the explanatory supplement for the annual reports 2025. Tabulated data can be found in the GB Data Report.

9.3 Risk factors associated with the recurrence of TB incidents.

History of TB infection in a herd was also an important risk factor for a new TB incident in 2025, in all risk areas. Herds with a new TB incident starting in 2025 were examined to determine what proportion had sustained another TB incident in the 3 years prior to the disclosing test, categorised by herd production type (referred to as 'backward looking' recurrence) (Figure 9.3.1).

For beef and 'other' herds across all risk areas, a larger proportion of herds experiencing a new TB incident in 2025 did not have a history of TB in the previous 3 years (Figure 9.3.1). On the other hand, a greater proportion of dairy herds with new incidents in the HRA and Edge Area had experienced another TB incident in the previous 3 years (classified as recurrent), compared to those which did not. In the LRA, the proportion of dairy herds with a recurrent new TB incident in 2025 was smaller than in the 2 other risk areas of England (Figure 9.3.1).

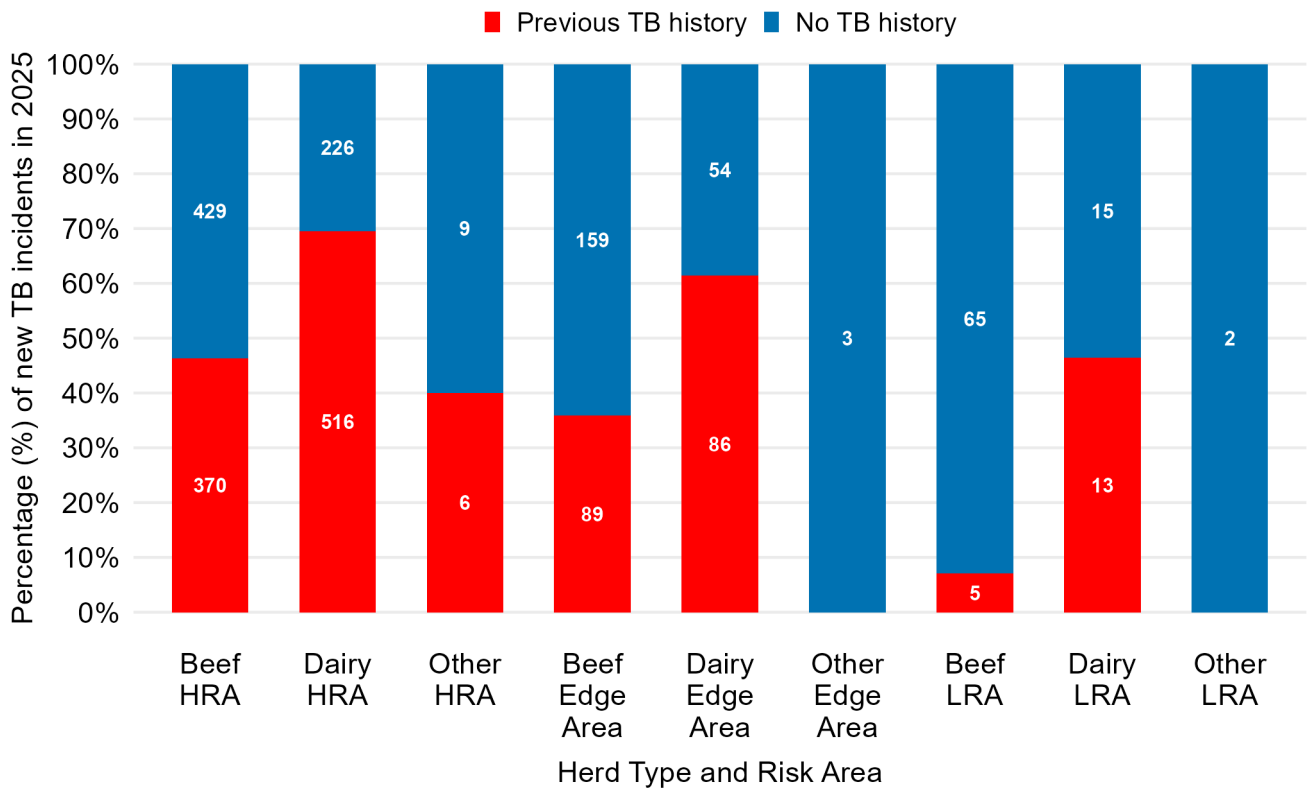


Figure 9.3.1 Percentage of herds that sustained a new TB incident in 2025 with and without a history of TB in the previous 3 years of the disclosing test, by risk area and herd type in England.

Multivariable logistic regression models were used to determine if previous TB incidents (OTF-S or OTF-W) increased the odds of a herd experiencing a new TB incident in 2025 (referred to as 'forward looking' recurrence). Each regression model

was adjusted for 3 risk factors (herd size, type and risk area location). An interaction term was included between the risk factor (risk area, herd type or herd size) and whether the herd, which previously experienced a TB incident, had a new incident in 2025. The interaction term was used to understand the relationship between each risk factor and recurrence. The model outputs from each interaction term are shown in Figure 9.3.2.

In 2025, herds in the HRA with a history of TB in the previous 3 years had over 2 and a half times the odds of a new TB incident, compared to herds with no history of TB (odds ratio (OR) 2.67, 95% CI: 2.38-2.99, p<0.001). Similarly, herds with a history of TB in the previous 3 years in the Edge Area had nearly 3.5 times greater odds of a new TB incident in 2025 compared to those with no history of TB (OR 3.43, 95% CI 2.75-4.37, p<0.001) (Figure 9.3.2).

In the LRA this relationship was more pronounced. Herds with a history of TB in the previous 3 years had 7 times higher odds of a new TB incident in 2025 compared to herds with no history of TB (OR 7.01, 95% CI: 4.13-11.88, p<0.001). This may be partially explained by the presence of several TB hotspots declared in the LRA with evidence of infected wildlife involvement (Figure 9.3.2). Enhanced TB surveillance in these areas and in other high-risk herds, for example large beef finishing units regularly purchasing cattle from TB endemic areas, means that a relatively small proportion of LRA herds were tested more frequently, due to their greater risk of TB infection. These herds generated most of the TB incidents in the LRA and, due to a more frequent testing regime, had naturally higher odds of a recurrent incident. Most other herds outside of these designated hotspot areas in the LRA would not have been exposed to the same force of infection from local cattle herds and wildlife reservoirs (badgers or deer) as those in the hotspot areas. Also, most of the herds outside of the hotspot areas would have had less opportunity for the detection of TB infection due to the 4-yearly testing policy and so recurrent incidents are less likely to occur in these herds.

In the HRA, herds with a history of TB in the previous 3 years have consistently had over 2 times the odds of a TB incident across the last 3 reporting years, with the odds ratio increasing only slightly from 2.2 (95% CI: 2.0 to 2.4) in 2023. In the Edge Area, the odds ratio was higher in 2025 compared to 2024 (OR 2.9, 95% CI: 2.4 to 3.6). Conversely, in the LRA, the odds ratio was lower in 2025, compared to 2024 (OR 9.0, 95% CI: 5.7 to 14.1) but remained considerably higher than the HRA and Edge Area.

The odds ratio for recurrence in herds with a TB history in the previous 3 years compared to herds with no TB history in the previous 3 years was similar between herd size categories, herd type and the HRA and Edge Area. The 95% confidence intervals for all categories of herd size, herd type and the HRA and Edge Area overlap, suggesting that in 2025 the odds of a recurrent incident in herds with a

history of TB in the previous 3 years was similar for all herds regardless of size, type and being located in either the HRA or the Edge Area (Figure 9.3.2).

The effect of history of a previous OTF-W incident in the preceding 3 years on recurrence of a new incident (OTF-S and OTF-W) in 2025 was also examined using logistic regression (results shown in Appendix 2, Table 10.1.4). The interaction of previous OTF-W history, with herd location, herd type and herd size on the odds of recurrence, is similar to the analysis including all previous TB incidents, which is described above and summarised in Figure 9.3.2 below. This was also the case in previous years.

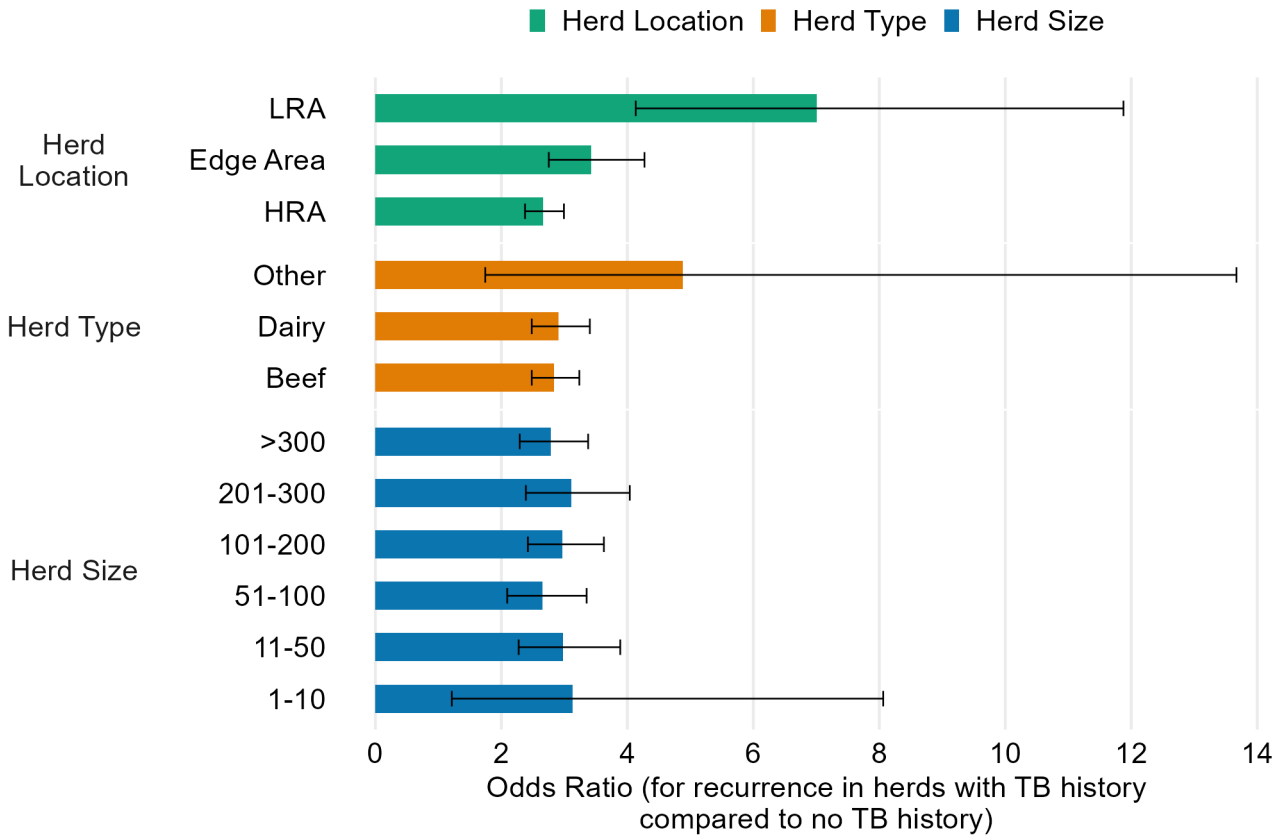


Figure 9.3.2 Combined odds ratios that include the interaction term, displaying how the effect of risk area, herd type and herd size on recurrent incidents in herds in 2025, is modified by history of a TB incident in the previous 3 years.

Figure 9.3.2 description: The results shown are from 3 separate logistic regression models which included herd location (risk area), herd type and herd size category as fixed effects, and the odds ratios shown are an interaction term between whether a herd experienced a previous TB incident (OTF-S or OTF-W) and each risk factor explored. The error bars display the 95% confidence interval.

Recurrent incidents can occur for multiple reasons: residual infection in the cattle herd remaining from a previous TB incident, repeated exposure to a local source of

M. bovis infection in wildlife reservoirs or cattle herds, or introductions of undetected infected cattle to a herd.

In summary, a large herd size increases the risk of experiencing a new TB incident, as well as increasing the duration of that incident. Herds in the HRA are at increased risk of a new TB incident compared to herds in the Edge Area, which in turn are at an increased risk of a new TB incident compared to herds in the LRA. Dairy herds are at over 3 times higher risk of a new TB incident compared to beef herds. However, when herd size and location factors are adjusted for in a multivariable Poisson regression model, the risk is reduced to approximately 1.5 times that of beef herds. A herd with a history of TB in the previous 3 years had approximately double the odds of experiencing a new TB incident in 2025 compared to a herd that had no history. When herd size, type and location were adjusted for in a multivariable logistic regression model, herds in the LRA with a history of TB had approximately 7 times the odds of sustaining a new TB incident in 2025, compared to those herds that had no history of TB.

Appendix 1

Table 10.1.1 Number and percentage of new TB incidents by source attribution category derived from the Local Infection Indicator, Residual Infection Algorithm and Cattle Movement Algorithm for the HRA.

	Local WGS, high res, high moves	Local WGS, high res, low moves	Local WGS, low res, high moves	Local WGS, low res, low moves	No Local WGS, high res, high moves	No Local WGS, high res, low moves	No Local WGS, low res, high moves	No Local WGS, low res, low moves	No WGS available, high res, high moves	No WGS available, high res, low moves	No WGS available, low res, high moves	No WGS available, low res, low moves
Avon	1 (1.2%)	4 (4.7%)	1 (1.2%)	20 (23.3%)	(0.0%)	1 (1.2%)	2 (2.3%)	10 (11.6%)	(0.0%)	6 (7.0%)	8 (9.3%)	33 (38.4%)
Cornwall	(0.0%)	5 (2.3%)	4 (1.8%)	42 (19.0%)	2 (0.9%)	1 (0.5%)	6 (2.7%)	24 (10.9%)	(0.0%)	23 (10.4%)	19 (8.6%)	95 (43.0%)
Devon	2 (0.5%)	15 (3.6%)	8 (1.9%)	39 (9.2%)	5 (1.2%)	2 (0.5%)	14 (3.3%)	41 (9.7%)	1 (0.2%)	59 (14.0%)	27 (6.4%)	209 (49.5%)
Dorset	(0.0%)	1 (1.0%)	3 (2.9%)	2 (1.9%)	(0.0%)	2 (1.9%)	1 (1.0%)	10 (9.7%)	(0.0%)	11 (10.7%)	3 (2.9%)	70 (68.0%)
Gloucestershire	(0.0%)	2 (2.1%)	2 (2.1%)	7 (7.4%)	1 (1.1%)	4 (4.3%)	7 (7.4%)	16 (17.0%)	(0.0%)	12 (12.8%)	6 (6.4%)	37 (39.4%)
Hereford and Worcester	1 (0.7%)	4 (2.8%)	3 (2.1%)	19 (13.5%)	(0.0%)	3 (2.1%)	9 (6.4%)	29 (20.6%)	(0.0%)	6 (4.3%)	10 (7.1%)	57 (40.4%)
Shropshire	(0.0%)	7 (4.9%)	6 (4.2%)	28 (19.4%)	1 (0.7%)	(0.0%)	12 (8.3%)	27 (18.8%)	1 (0.7%)	11 (7.6%)	10 (6.9%)	41 (28.5%)
Somerset	1 (0.6%)	6 (3.9%)	5 (3.2%)	20 (12.9%)	(0.0%)	5 (3.2%)	8 (5.2%)	17 (11.0%)	(0.0%)	7 (4.5%)	10 (6.5%)	76 (49.0%)
Staffordshire	1 (0.8%)	4 (3.2%)	3 (2.4%)	10 (8.0%)	(0.0%)	1 (0.8%)	6 (4.8%)	15 (12.0%)	1 (0.8%)	18 (14.4%)	8 (6.4%)	58 (46.4%)
West Midlands	(0.0%)	(0.0%)	(0.0%)	1 (25.0%)	(0.0%)	(0.0%)	(0.0%)	2 (50.0%)	(0.0%)	(0.0%)	(0.0%)	1 (25.0%)
Wiltshire	(0.0%)	2 (1.6%)	2 (1.6%)	14 (11.1%)	(0.0%)	3 (2.4%)	1 (0.8%)	18 (14.3%)	2 (1.6%)	9 (7.1%)	11 (8.7%)	64 (50.8%)
HRA total	**6 (0.4%)**	**50 (3.1%)**	**37 (2.3%)**	**202 (12.5%)**	**9 (0.6%)**	**22 (1.4%)**	**66 (4.1%)**	**209 (12.9%)**	**5 (0.3%)**	**162 (10.0%)**	**112 (6.9%)**	**741 (45.7%)**
England total	**7 (0.3%)**	**65 (3.1%)**	**54 (2.5%)**	**273 (12.8%)**	**9 (0.4%)**	**28 (1.3%)**	**100 (4.7%)**	**266 (12.5%)**	**8 (0.4%)**	**203 (9.5%)**	**153 (7.2%)**	**962 (45.2%)**

Notes:

- Percentages for county and risk-area totals are calculated using the total number of new TB incidents within that county or risk area as the denominator. Percentages shown in the England total row are calculated using the total number of new TB incidents in England in 2025 as the denominator. The England total row is repeated in each table for ease of comparison.
- In the column headers, ‘res’ is an abbreviation of residual and ‘moves’ is an abbreviation of cattle movements.

Table 10.1.2 Number and percentage of new TB incidents by source attribution category derived from the Local Infection Indicator, Residual Infection Algorithm and Cattle Movement Algorithm for the Edge Area.

	Local WGS, high res, high moves	Local WGS, high res, low moves	Local WGS, low res, high moves	Local WGS, low res, low moves	No Local WGS, high res, high moves	No Local WGS, high res, low moves	No Local WGS, low res, high moves	No Local WGS, low res, low moves	No WGS available, high res, high moves	No WGS available, high res, low moves	No WGS available, low res, high moves	No WGS available, low res, low moves
Berkshire	1 (5.9%)	1 (5.9%)	1 (5.9%)	6 (35.3%)	0 (0.0%)	0 (0.0%)	1 (5.9%)	2 (11.8%)	0 (0.0%)	1 (5.9%)	1 (5.9%)	3 (17.6%)
Buckinghamshire	0 (0.0%)	2 (6.3%)	1 (3.1%)	12 (37.5%)	0 (0.0%)	0 (0.0%)	1 (3.1%)	3 (9.4%)	0 (0.0%)	3 (9.4%)	1 (3.1%)	9 (28.1%)
Cheshire	0 (0.0%)	1 (1.3%)	3 (3.9%)	14 (18.2%)	0 (0.0%)	2 (2.6%)	3 (3.9%)	9 (11.7%)	3 (3.9%)	6 (7.8%)	3 (3.9%)	33 (42.9%)
Derbyshire	0 (0.0%)	1 (1.6%)	1 (1.6%)	4 (6.3%)	0 (0.0%)	0 (0.0%)	3 (4.7%)	8 (12.5%)	0 (0.0%)	7 (10.9%)	8 (12.5%)	32 (50.0%)
East Sussex	0 (0.0%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (7.1%)	2 (14.3%)	10 (71.4%)
Hampshire	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (19.2%)	0 (0.0%)	2 (7.7%)	1 (3.8%)	4 (15.4%)	0 (0.0%)	4 (15.4%)	1 (3.8%)	9 (34.6%)
Leicestershire	0 (0.0%)	0 (0.0%)	2 (4.0%)	7 (14.0%)	0 (0.0%)	0 (0.0%)	4 (8.0%)	7 (14.0%)	0 (0.0%)	4 (8.0%)	5 (10.0%)	21 (42.0%)
Northamptonshire	0 (0.0%)	2 (11.1%)	1 (5.6%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (11.1%)	2 (11.1%)	0 (0.0%)	0 (0.0%)	2 (11.1%)	9 (50.0%)
Nottinghamshire	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (12.5%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (25.0%)	5 (62.5%)
Oxfordshire	0 (0.0%)	7 (11.1%)	5 (7.9%)	11 (17.5%)	0 (0.0%)	1 (1.6%)	2 (3.2%)	4 (6.3%)	0 (0.0%)	9 (14.3%)	1 (1.6%)	23 (36.5%)
Warwickshire	0 (0.0%)	0 (0.0%)	1 (2.9%)	6 (17.1%)	0 (0.0%)	0 (0.0%)	5 (14.3%)	4 (11.4%)	0 (0.0%)	4 (11.4%)	1 (2.9%)	14 (40.0%)
Edge Area total	**1 (0.2%)**	**15 (3.7%)**	**15 (3.7%)**	**65 (16.1%)**	**0 (0.0%)**	**5 (1.2%)**	**23 (5.7%)**	**43 (10.6%)**	**3 (0.7%)**	**39 (9.7%)**	**27 (6.7%)**	**168 (41.6%)**
England total	**7 (0.3%)**	**65 (3.1%)**	**54 (2.5%)**	**273 (12.8%)**	**9 (0.4%)**	**28 (1.3%)**	**100 (4.7%)**	**266 (12.5%)**	**8 (0.4%)**	**203 (9.5%)**	**153 (7.2%)**	**962 (45.2%)**

Notes:

- Percentages for county and risk-area totals are calculated using the total number of new TB incidents within that county or risk area as the denominator. Percentages shown in the England total row are calculated using the total number of new TB incidents in England in 2025 as the denominator. The England total row is repeated in each table for ease of comparison.
- In the column headers, ‘res’ is an abbreviation of residual and ‘moves’ is an abbreviation of cattle movements.

Table 10.1.3 Number and percentage of new TB incidents by source attribution category derived from the Local Infection Indicator, Residual Infection Algorithm and Cattle Movement Algorithm for the LRA.

	Local WGS, high res, high moves	Local WGS, high res, low moves	Local WGS, low res, high moves	Local WGS, low res, low moves	No Local WGS, high res, high moves	No Local WGS, high res, low moves	No Local WGS, low res, high moves	No Local WGS, low res, low moves	No WGS available, high res, high moves	No WGS available, high res, low moves	No WGS available, low res, high moves	No WGS available, low res, low moves
Cumbria	1 (4.2%)	0 (0.0%)	0 (0.0%)	2 (8.3%)	0 (0.0%)	1 (4.2%)	1 (4.2%)	5 (20.8%)	0 (0.0%)	1 (4.2%)	2 (8.3%)	11 (45.8%)
Lincolnshire	1 (5.6%)	0 (0.0%)	0 (0.0%)	4 (22.2%)	0 (0.0%)	0 (0.0%)	2 (11.1%)	2 (11.1%)	0 (0.0%)	0 (0.0%)	2 (11.1%)	7 (38.9%)
North East	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (33.3%)	2 (66.7%)
North West	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (7.1%)	0 (0.0%)	0 (0.0%)	4 (28.6%)	9 (64.3%)
South East	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5 (17.2%)	4 (13.8%)	0 (0.0%)	1 (3.4%)	3 (10.3%)	16 (55.2%)
Yorkshire and Humberside	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (20.0%)	2 (13.3%)	0 (0.0%)	0 (0.0%)	2 (13.3%)	8 (53.3%)
LRA total	**2 (1.9%)**	**0 (0.0%)**	**0 (0.0%)**	**6 (5.8%)**	**0 (0.0%)**	**1 (1.0%)**	**11 (10.7%)**	**14 (13.6%)**	**0 (0.0%)**	**2 (1.9%)**	**14 (13.6%)**	**53 (51.5%)**
England total	**7 (0.3%)**	**65 (3.1%)**	**54 (2.5%)**	**273 (12.8%)**	**9 (0.4%)**	**28 (1.3%)**	**100 (4.7%)**	**266 (12.5%)**	**8 (0.4%)**	**203 (9.5%)**	**153 (7.2%)**	**962 (45.2%)**

Notes:

- Percentages for county and risk-area totals are calculated using the total number of new TB incidents within that county or risk area as the denominator. Percentages shown in the England total row are calculated using the total number of new TB incidents in England in 2025 as the denominator. The England total row is repeated in each table for ease of comparison.
- In the column headers, ‘res’ is an abbreviation of residual and ‘moves’ is an abbreviation of cattle movements.

Appendix 2

Table 10.1.4 The odds ratio for recurrence in herds with a history of an OTF-W incident compared to herds without an OTF-W history in the previous 3 years. The results shown are from 3 separate logistic regression models which included herd location (risk area), herd type and herd size category as fixed covariates, and an interaction term between whether a herd experienced a previous TB incident and each risk factor explored (n= number of new incidents (OTF-S and OTF-W) in 2025 with a previous OTF-W incident in the last 3 years. N= number of new incidents (OTF-S and OTF-W) in 2025 without a previous OTF-W incident in the last 3 years). The outcomes displayed are the output of the interaction term from each model between the herd recurrence status (Y/N), and the risk factor (herd size, herd type or risk area).

Risk Factor	Category	n/N	Odds Ratio	Standard Error	z	P value	95% Confidence Interval (lower bound)	95% Confidence Interval (upper bound)
Herd Size	1-10	4/36	5.02	2.693	3.01	0.003	1.75	14.36
Herd Size	11-50	40/256	2.83	0.505	5.82	< 0.001	1.99	4.01
Herd Size	51-100	62/271	2.38	0.364	5.68	< 0.001	1.77	3.21
Herd Size	101-200	123/326	2.42	0.287	7.47	< 0.001	1.92	3.06
Herd Size	201-300	101/195	2.18	0.309	5.52	< 0.001	1.65	2.88
Herd Size	>300	263/370	1.79	0.173	6.06	< 0.001	1.48	2.17
Herd Type	Beef	252/865	2.27	0.183	10.16	<0.001	1.94	2.66

Risk Factor	Category	n/N	Odds Ratio	Standard Error	z	P value	95% Confidence Interval (lower bound)	95% Confidence Interval (upper bound)
Herd Type	Dairy	338/572	2.07	0.171	8.76	<0.001	1.76	2.43
Herd Type	Other	3/17	6.17	4.479	2.51	0.012	1.49	25.59
Risk Area	HRA	485/1071	1.96	0.127	10.38	<0.001	1.72	2.22
Risk Area	Edge Area	104/287	3.45	0.453	9.42	<0.001	2.66	4.46
Risk Area	LRA	4/96	4.19	2.201	2.73	0.006	1.5	11.73

Note: Some categories contain relatively small numbers of recurrent incidents and therefore have wide confidence intervals. Results for these categories should be interpreted cautiously and in conjunction with the confidence intervals rather than the point estimates alone.