Department for Environment Food & Rural Affairs

Quarterly publication of National Statistics on the incidence and prevalence of tuberculosis (TB) in Cattle in Great Britain – to end June 2016

These statistics were released on Wednesday 14 September 2016 at 9:30. The next quarterly notice to be updated on Wednesday 14 December 2016 at 9:30. The underlying monthly datasets will next be updated on Wednesday 12 October 2016.

These statistics are obtained from the Animal and Plant Health Agency (APHA) work management IT support system (Sam), used for the administration of TB testing in GB. They are a snapshot of the position on the date on which the data were extracted. These statistics may be subject to small revisions until all test results are available. In particular figures from 2014 onwards will be subject to further revision as test and incident records are completed.

Short term changes in these statistics should be considered in the context of long term trends. The charts in this statistical notice give the latest indication of how trends in bovine TB have changed since 1996.

Key points – June 2016

Please read the detailed guidance on how these measures are calculated at https://www.gov.uk/government/statistics/data-and-methodology.

Table 1: Herd incidence and herd prevalence

	New herd incidents per 100 herd years at risk		Disease restricted herds as a percentage of registered herds at end	
	12 months to end June 2015	12 months to end June 2016	12 months to end June 2015	12 months to end June 2016
England	8.9	10.1	5.6	5.8
High risk area	18.1	18.4	11.1	11.2
Edge area	4.9	6.3	3.2	4.1
Low risk area	0.8	1.1	0.3	0.3
Scotland	0.5	0.6	0.2	0.2
Wales	8.5	7.1	6.0	5.6

In England both the **herd incidence rate and herd prevalence have increased** between the last two 12-month periods and have stayed relatively stable in Scotland. In Wales incidence and prevalence have decreased. Incidence and prevalence are highest in the High Risk Area of England (HRA) and lowest in the Low Risk Area of England (LRA) and in Scotland.

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Table 2: New herd incidents and non-OTF herds

	New herd incidents			Herds not officially TB free at the end of the period due to a bovine TB incident (non-OTF herds)		
	12 months to end June 2015	12 months to end June 2016	Year-on-year change	12 months to end June 2015	12 months to end June 2016	Year-on-year change
England	3,838	3,899	2%	2,858	2,942	3%
High risk area	3,392	3,364	-1%	2,556	2,578	1%
Edge area	313	384	23%	234	295	26%
Low risk area	133	151	14%	68	69	1%
Scotland	35	47	34%	23	29	26%
Wales	884	740	-16%	713	647	-9%

Between the 12 months ending June 2016 and the previous 12 month period, there was a decrease in the number of new TB incidents in the HRA and Wales. In Scotland, the Edge Risk Area of England (ERA) and the LRA there was an increase in the number of incidents. Prevalence at end June 2016 (the percentage of herds which were not Officially TB Free (OTF) due to a TB incident) increased in the HRA and ERA of England and decreased in Wales. In the LRA and Scotland prevalence remained unchanged from June 2015. In Scotland the number of non-OTF herds is very low and approximately 45% of cattle herds are now exempt from routine TB surveillance testing.

In Scotland and the LRA, there are proportionately more false positive results to the tuberculin skin test than elsewhere in GB[1]. Consequently it is also important to consider the number of new TB incidents where OTF status is withdrawn (OTFW) following confirmation of TB by post-mortem examination or laboratory culture of tissue samples. During the 12 months ending June 2016 there were 43 such incidents in the LRA , the same number as for the previous 12 months. In Scotland there were 11 OTFW incidents in the period ending June 2016 and 8 in the 12 months to end June 2015. The OTFW incidence rate in the LRA was 0.3 breakdowns per 100 herd-years at risk in both periods. In Scotland the OTFW incidence rate of breakdowns per 100 herd-years was 0.1 in both periods.

Table 3: Total animals slaughtered*

	12 months to end June 2015	12 months to end June 2016	Year-on-year change
England	26,157	29,805	14%
High risk area	22,778	26,185	15%
Edge area	2,804	2,949	5%
Low risk area	575	671	17%
Scotland	121	203	68%
Wales	6,647	9,476	43%

* Includes test reactors, direct contacts and inconclusive reactors.

There was an increase in the number of cattle slaughtered due to a TB incident across each of the risk areas in England and also in Scotland and Wales.

Further detail can be found in Tables 4-7. The charts published in this statistical notice, together with the equivalent figures from January 1996 onwards, are also available in spreadsheet format at https://www.gov.uk/government/publications/incidence-of-tuberculosis-tb-in-cattle-in-great-britain.

[1] See for example: http://veterinaryrecord.bmj.com/content/177/10/258.summary.pdf and http://veterinaryrecord.bmj.com/content/177/10/258.full.pdf+html

Herd incidence

Figure 1: New herd incidents per 100 herd years at risk of infection during the year - GB, per quarter

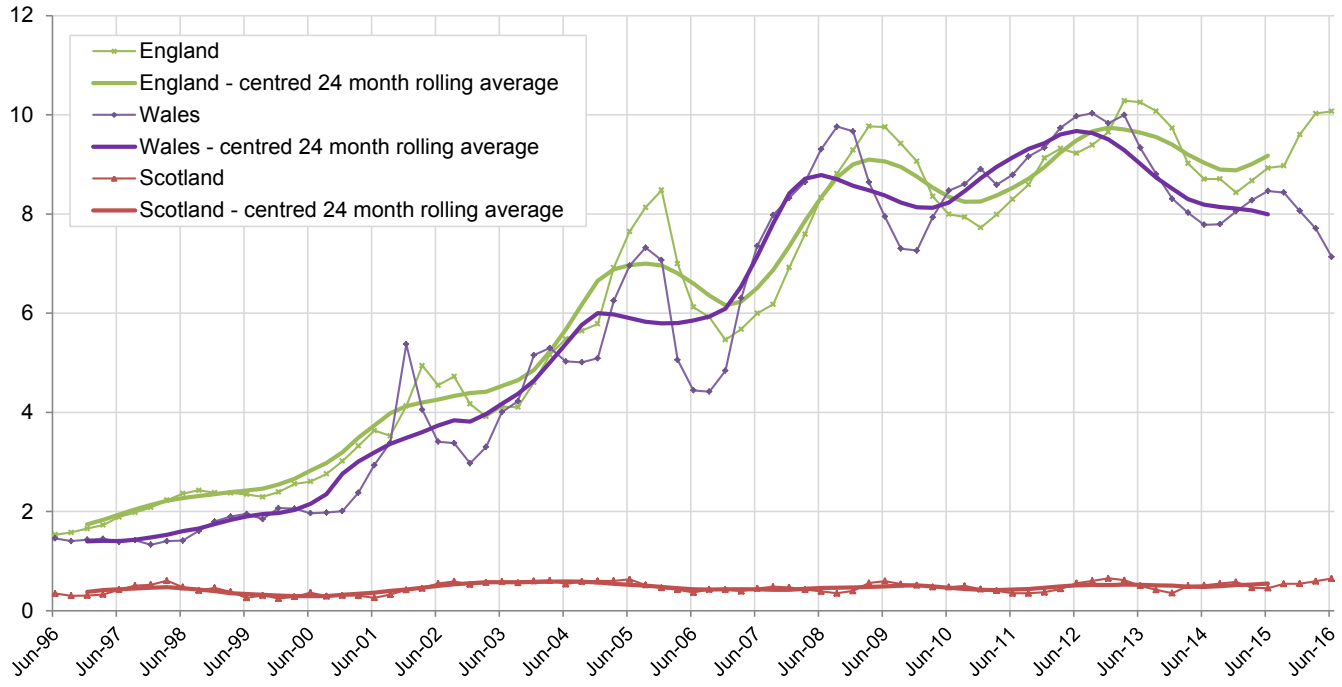


Figure 2: New herd incidents per 100 herd years at risk of infection during the year – England, per quarter

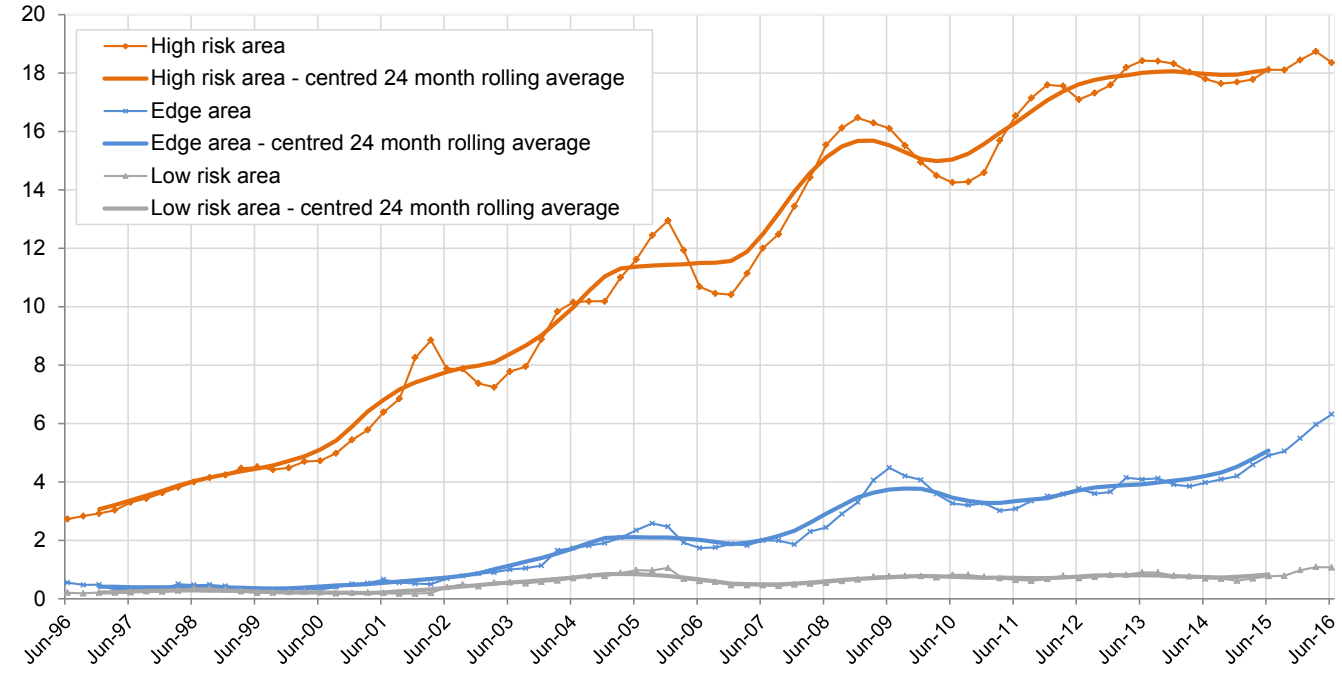
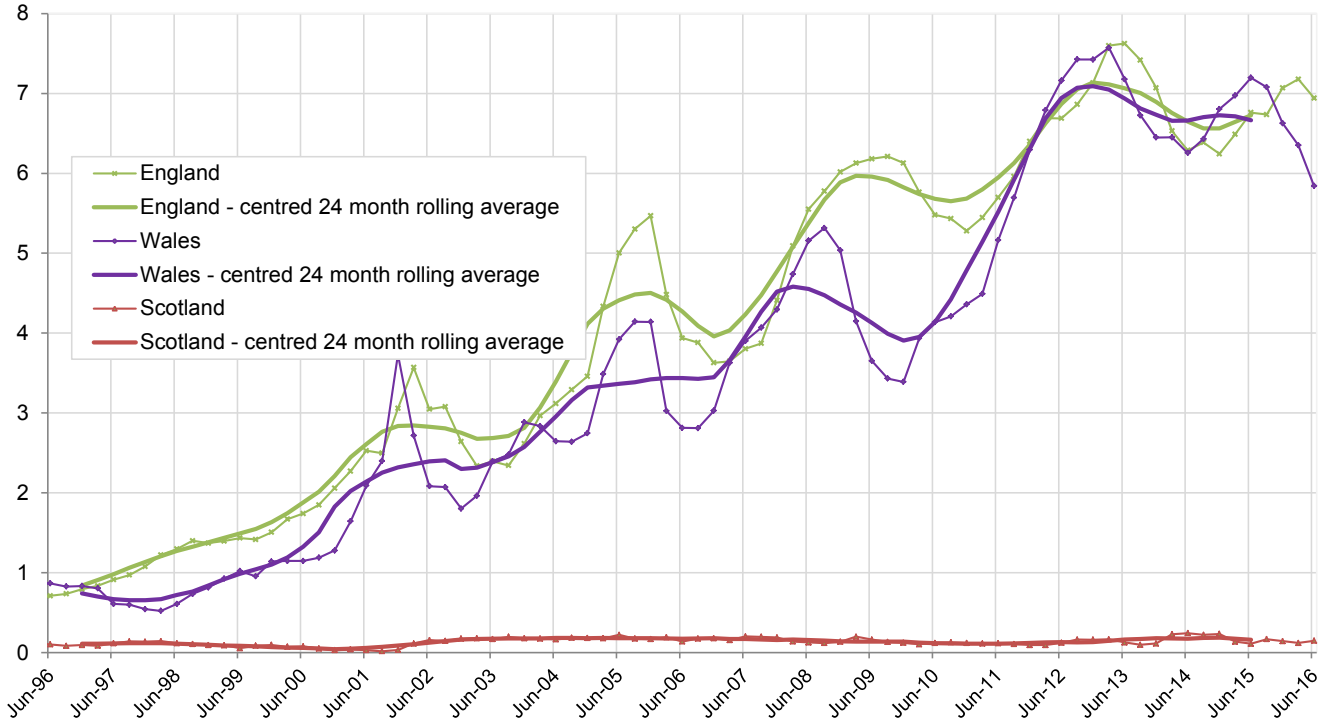
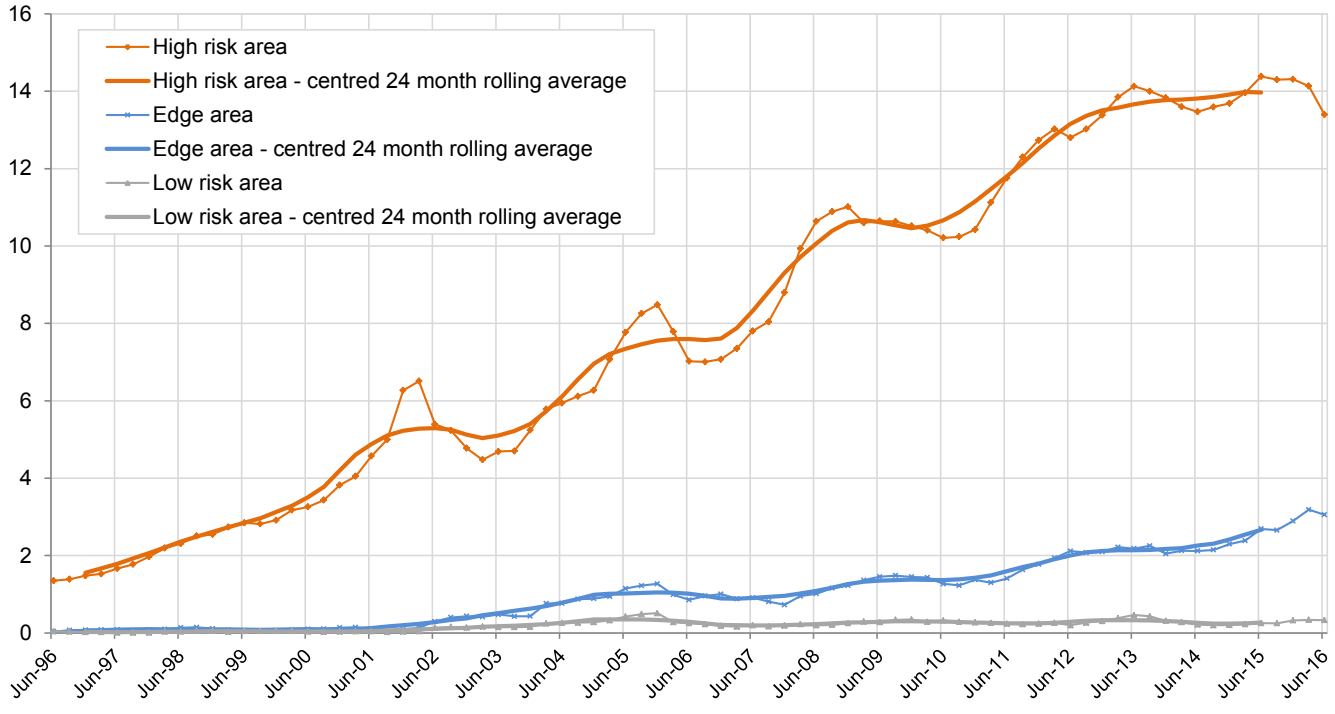


Figure 3: New herd incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year – GB, per quarter



NOTE: from 2011, the figures presented for OTF-W incidents in Wales are not directly comparable to England or Scotland. This is due to the inclusion of some incidents in Wales which have their OTF status withdrawn for epidemiological reasons, without confirmation via post mortem examination or bacteriological culture. Elsewhere in GB these would be classed as OTF-S.

Figure 4: New herd incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year – England, per quarter



Herd prevalence

Figure 5: Number of herds under disease restrictions at the end of the period as a percentage of registered and active herds – GB

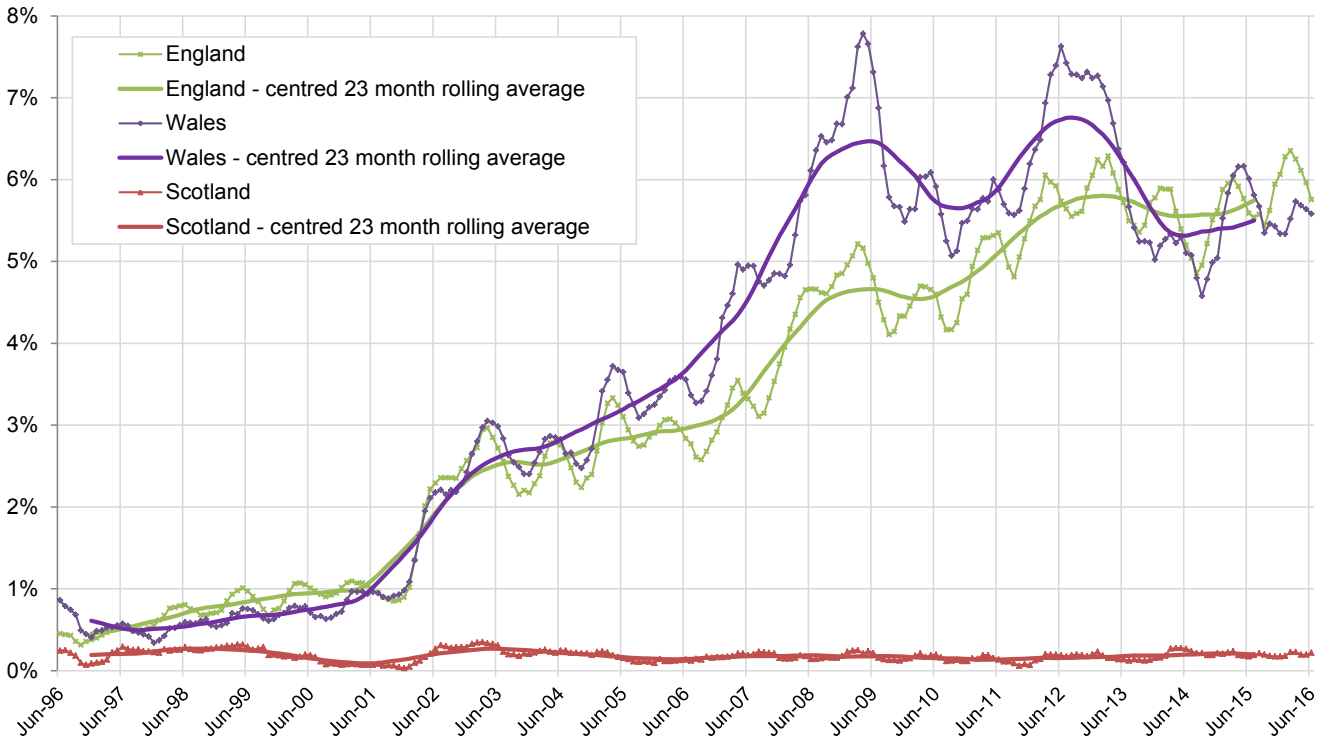
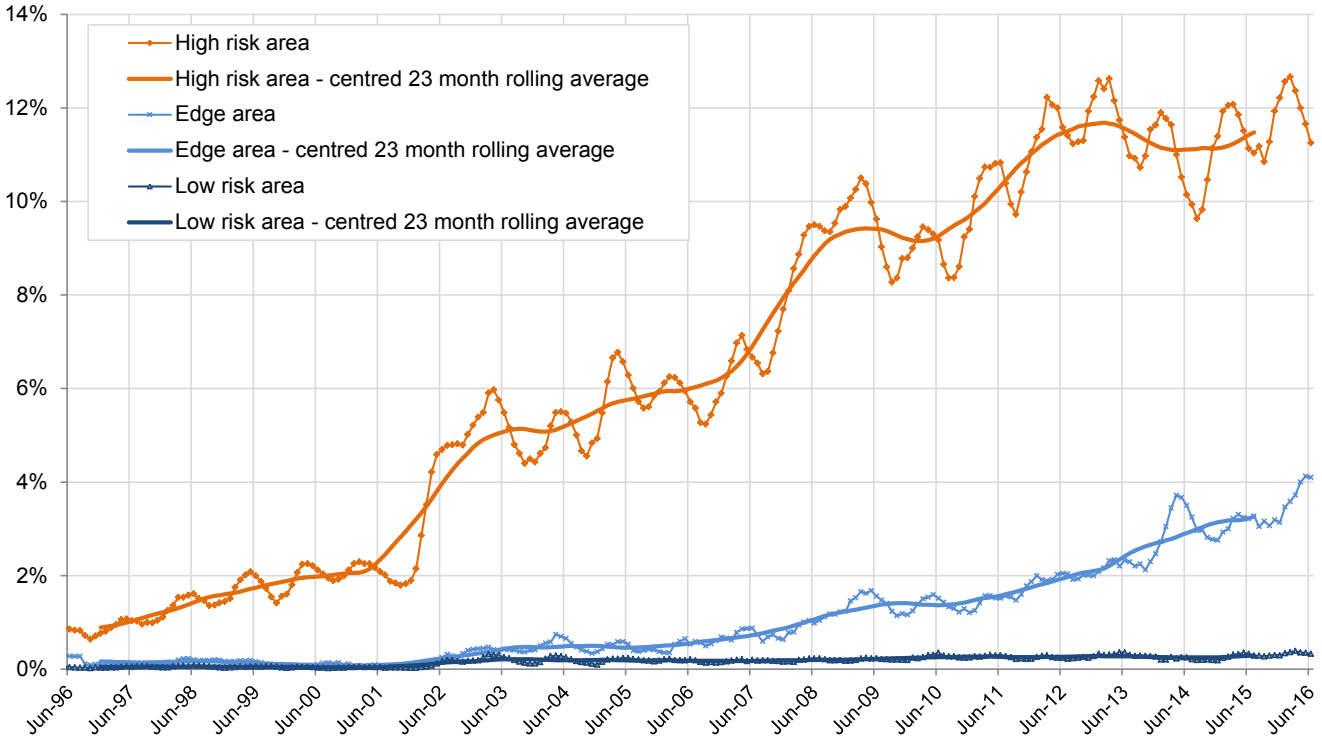


Figure 6: Number of herds under disease restrictions at the end of the period as a percentage of registered and active herds – England



Trends in TB

There has been an overall long-term upward trend in the incidence of TB in cattle herds in England and Wales since 1996 (when these statistical series begin), although there is evidence that the rate of new incidents is levelling off in most areas of the country.

There was a fairly steady increase in the herd incidence rate until early 2001 when there was an outbreak of foot and mouth disease (FMD) from February to October. During this period TB testing was suspended. In the meantime, new bTB breakdowns continued to be detected on farms through routine post-mortem meat inspection of cattle carcases in abattoirs. Following the 2001 FMD outbreak there was a gradual resumption in TB testing.

There appears to be a three-year cycle in the bTB herd incidence rate from 2001 onwards. This can be observed in figures 1 to 4, above, with peaks in 2005, 2008 and (to a lesser extent) 2013, and troughs in 2006 and 2009. This pattern has stabilised somewhat in recent years. There is no clear explanation for this pattern, because bTB is a chronic disease with a complex epidemiology and reservoirs of infection in cattle and, in some areas of GB, wildlife. As a result of surveillance and testing changes, there has been no stable time series until recently. For example, there have been different herd testing frequencies in each parish over time, ranging from annual to four-yearly and changing every year until those frequencies were unified in Wales in 2010 (annual) and in England in 2013 (annual and four-yearly).

There are several possible explanations:

1. The smoothed trend represents true seasonal changes in the transmission risk and prevalence of infection in wildlife and cattle populations. However there is no strong evidence to support this.

2. After FMD higher risk herds were tested every 3 to 4 years and could have contributed to a cyclically higher incidence rate. However breakdowns in the 4-yearly (and formerly 3-yearly) testing areas represent a small and decreasing proportion of the breakdowns in any given year.

3. When testing resumed in 2002 following the 2001 FMD outbreak, high-risk herds may have been identified and put under restrictions if a reactor was identified, then control tested for a period (when they cannot generate a new incident). Once the bTB incident has been resolved and OTF herd status is restored, the herd becomes susceptible to a new incident as it undergoes post-breakdown surveillance tests at 6 and 18 months after regaining OTF status.

4. The incidence rate reflects changes to testing policy unrelated to the FMD outbreak, in particular increases in testing in 2005 and 2008.

In terms of prevalence (the percentage of herds with an open TB incident), figure 5 shows an increase in England and Wales at the beginning of 2002. This may have been the result of the suspension of TB testing during the FMD outbreak in February-October 2001 (including the 60-day tests of TB-infected herds to regain OTF status) along with the detection of new

breakdowns through routine slaughterhouse surveillance. Although TB herd testing gradually resumed from the end of 2001, a proportion of higher-risk herds were put under TB restrictions pending completion of their overdue tests. Prevalence continued to increase steadily from 2002. In Wales there were peaks in 2009 and 2012, following which there has been a decline and stabilisation of the trend. After a peak in England in early 2013 the trend appears to have stabilised. However, for both England and Wales it is too early to conclude that this is part of a new longer term trend.

Regional differences

The regional and county-level statistics published as part of this statistical notice show that there are considerable differences in the distribution and frequency of bovine TB across GB.

Note that since 2011, the trends for the herd incidence rate showing incidents with officially TB-free status withdrawn (OTFW) per 100 herd years at risk of infection during the year (i.e. figure 3) are not directly comparable for Wales and the other countries of GB. This is because from 2011 onwards, for Wales the number of incidents includes those where there is no confirmation of TB via post mortem examination or bacteriological culture, but where the herd's OTF status is withdrawn for epidemiological reasons. Such herds in England and Scotland are not included in the count of OTFW incidents. The overall herd incidence rate (figure 1 and table 1) should be used to compare countries.

Scotland, which has had officially TB-free (OTF) status since 2009, has relatively few herd breakdowns. The herd incidence is very low and stable and is largely driven by sporadic introductions of infected cattle into Scotland.

In Wales, TB incidence and prevalence varies across regions. The South West, East and South East regions have high levels of bovine TB whereas the regions in the North West, North East and South Wales have relatively low levels. To attempt to contain the disease and prevent its spread into these lower-incidence regions, all herds in Wales are tested for the disease at least annually. The strategically-located Intensive Action Area (north Pembrokeshire and small parts of Ceredigion and Carmarthenshire) has one of the highest incidence rates of bovine TB in Wales. Here there are extra measures in place to control the disease, such as stricter cattle controls, 6-monthy testing and improved biosecurity.

In England, there are wide geographical variations in the incidence and prevalence of bTB. This is reflected in the division of the country into three different epidemiological areas, with different disease control strategies and herd testing regimes applied in each of them:

- In the *Low Risk Area* of the North, East and South East of England, the incidence of bTB is very low and stable and most cattle herds are routinely tested every four years. Similar to Scotland, the majority of breakdowns in the Low Risk Area can be linked to movements of undetected infected cattle from other areas of GB.

- In the *Edge* Area, which spans most of Cheshire, parts of the counties of Derbyshire, Warwickshire, Oxfordshire and East Sussex and the whole of Nottinghamshire, Leicestershire, Northamptonshire, Buckinghamshire and Hampshire, the herd incidence

is higher than in the Low Risk Area, although this varies from county to county. After a small spike in the first half of 2014 prevalence may be starting to stabilise.

- In the *High Risk Area* of the West Midlands and South West of England, the incidence and prevalence of infected cattle have increased steadily to relatively high levels. This is partly a result of a reservoir of endemic *M. bovis* infection in the local wildlife. There is evidence of a slowing down in both the incidence and prevalence rates since around 2012.

Table 4: Herd and test numbers – Great Britain

	England				Scotland				Wales				Great Britain (5)			
	Number of cattle herds registered on Sam (1)	Total tests on herds (2)	Tests on officially TB free (OTF) herds (3)	Total cattle tests (4)	Number of cattle herds registered on Sam	Total tests on herds	Tests on officially TB free (OTF) herds	Total cattle tests	Number of cattle herds registered on Sam	Total tests on herds	Tests on officially TB free (OTF) herds	Total cattle tests	Number of cattle herds registered on Sam	Total tests on herds	Tests on officially TB free (OTF) herds	Total cattle tests
2005	62,015	40,660	33,428	3,656,667	14,667	3,884	3,800	226,921	15,083	11,296	9,456	915,856	91,765	55,844	46,688	4,799,522
2006	60,960	46,791	40,182	4,086,589	14,495	4,171	4,103	235,892	14,904	13,452	11,725	1,086,672	90,359	64,417	56,013	5,409,238
2007	58,871	46,599	39,610	4,223,950	14,100	4,525	4,435	286,727	14,148	13,011	10,801	1,221,558	87,119	64,138	54,849	5,732,372
2008	58,380	47,417	38,505	4,540,585	13,889	4,367	4,289	257,780	13,780	14,646	12,058	1,380,278	86,049	66,433	54,855	6,178,790
2009	57,376	50,141	40,333	4,829,107	13,759	3,641	3,555	217,737	13,183	18,422	15,005	1,793,639	84,318	72,205	58,894	6,840,614
2010	56,515	52,955	42,896	5,367,553	13,675	3,580	3,512	231,996	12,939	17,936	15,176	1,848,115	83,129	74,473	61,586	7,447,694
2011	54,293	54,122	42,825	5,496,051	13,316	3,426	3,359	229,824	12,821	19,108	16,302	1,861,996	80,443	76,656	62,486	7,587,871
2012	53,561	63,499	51,815	5,857,660	12,981	2,880	2,811	222,368	12,721	22,209	19,038	1,950,958	79,321	88,588	73,664	8,030,993
2013	53,706	64,428	52,807	6,283,185	12,952	2,322	2,276	162,945	12,642	20,082	17,085	1,943,846	79,392	86,848	72,183	8,390,230
2014	51,722	68,909	57,713	6,927,096	13,070	2,579	2,499	217,258	12,019	19,643	17,295	1,899,712	76,916	91,161	77,537	9,044,408
2015	51,232	69,002	57,328	7,303,970	13,176	2,634	2,565	265,800	11,669	20,575	18,132	2,022,787	76,124	92,234	78,048	9,592,867
12 months to end June 2015	51,148	68,502	57,413	7,068,545	13,148	2,677	2,595	273,451	11,864	20,117	17,785	1,935,832	76,198	91,334	77,831	9,278,292
12 months to end June 2016	51,123	64,708	52,622	7,370,237	13,228	2,612	2,541	250,473	11,589	19,292	16,910	2,049,444	75,981	86,619	72,080	9,670,342
Jan-13	53,532	6,366	5,281	566,452	12,978	380	375	28,352	12,689	2,007	1,686	176,411	79,256	8,753	7,342	771,215
Feb-13	53,540	6,551	5,444	592,997	12,980	315	301	30,357	12,680	2,139	1,817	190,978	79,261	9,005	7,562	814,332
Mar-13	53,585	6,708	5,716	629,631	12,993	234	231	17,453	12,675	2,313	2,063	206,281	79,323	9,255	8,010	853,365
Apr-13	53,668	6,022	4,850	618,128	13,013	165	163	11,698	12,685	1,897	1,597	195,632	79,442	8,084	6,610	825,458
May-13	53,772	5,375	4,280	493,434	13,018	175	170	10,512	12,691	1,808	1,524	160,952	79,550	7,358	5,974	664,898
Jun-13	53,816	3,893	2,996	370,103	13,030	76	75	3,048	12,719	1,118	875	109,360	79,639	5,087	3,946	482,511
Jul-13	53,809	3,946	2,949	401,226	13,043	77	74	2,722	12,718	1,057	837	107,280	79,658	5,080	3,860	511,228
Aug-13	53,779	4,261	3,363	401,588	13,042	64	60	4,102	12,729	1,221	986	131,617	79,627	5,550	4,413	537,364
Sep-13	53,847	4,405	3,567	426,489	12,925	78	76	3,698	12,742	1,497	1,269	145,515	79,612	5,982	4,913	575,851
Oct-13	53,910	5,388	4,520	534,613	12,938	144	141	6,961	12,675	1,734	1,539	180,174	79,608	7,271	6,205	721,777
Nov-13	53,834	6,380	5,472	700,083	12,948	291	290	19,647	12,657	1,910	1,679	207,034	79,522	8,584	7,444	926,779
Dec-13	53,706	5,133	4,369	548,441	12,952	323	320	24,395	12,642	1,381	1,213	132,612	79,392	6,839	5,904	705,452
Jan-14	53,580	7,340	6,053	767,987	12,968	367	364	34,497	12,576	1,983	1,714	197,101	79,216	9,693	8,134	999,612
Feb-14	53,557	6,750	5,775	653,049	12,967	353	353	30,689	12,541	1,944	1,766	180,653	79,156	9,050	7,897	864,394
Mar-14	53,376	7,171	6,246	671,707	12,983	315	305	24,030	12,410	2,091	1,893	184,501	78,856	9,577	8,444	880,267
Apr-14	53,429	6,073	5,042	607,341	12,997	177	171	12,715	12,385	1,829	1,611	178,438	78,903	8,082	6,827	798,532
May-14	53,433	6,320	5,188	550,158	13,024	200	193	12,658	12,393	1,779	1,560	154,376	78,943	8,301	6,943	717,234
Jun-14	53,437	4,444	3,521	425,461	13,044	106	96	8,911	12,366	1,167	972	113,000	78,946	5,717	4,589	547,372
Jul-14	53,285	4,449	3,465	459,126	13,047	108	95	5,352	12,314	1,169	968	114,196	78,750	5,730	4,532	578,736
Aug-14	53,282	4,067	3,304	399,698	13,048	104	95	6,826	12,295	1,207	1,010	111,516	78,728	5,380	4,411	518,050
Sep-14	52,266	4,598	3,825	480,968	13,041	95	88	6,692	12,280	1,402	1,228	151,502	77,691	6,097	5,143	639,196
Oct-14	51,770	6,045	5,147	635,521	13,063	145	140	10,676	12,106	1,952	1,758	206,216	77,041	8,147	7,050	852,476
Nov-14	51,789	6,520	5,750	686,014	13,065	283	276	28,263	12,071	1,706	1,553	168,943	77,033	8,513	7,583	883,251
Dec-14	51,722	5,132	4,397	590,066	13,070	326	323	35,949	12,019	1,414	1,262	139,270	76,916	6,874	5,984	765,288
Jan-15	51,226	7,298	6,125	752,914	13,063	455	449	52,047	11,960	2,164	1,937	210,794	76,334	9,921	8,515	1,015,788
Feb-15	51,110	6,845	5,844	680,021	13,077	391	384	49,734	11,879	2,097	1,919	171,006	76,132	9,337	8,151	900,840
Mar-15	51,073	6,949	6,023	714,135	13,080	297	291	34,088	11,871	2,211	2,048	202,718	76,087	9,459	8,364	951,020
Apr-15	51,092	7,037	5,814	696,419	13,097	186	176	18,133	11,858	2,111	1,839	201,748	76,109	9,340	7,835	916,364
May-15	51,091	4,975	4,085	493,192	13,134	202	199	19,112	11,860	1,518	1,304	141,298	76,154	6,697	5,590	653,605
Jun-15	51,148	4,587	3,634	480,471	13,148	85	79	6,579	11,864	1,166	959	116,625	76,198	5,839	4,673	603,678
Jul-15	51,219	5,314	4,141	554,606	13,165	90	84	3,984	11,856	1,422	1,155	141,760	76,278	6,828	5,382	700,373
Aug-15	51,116	4,362	3,567	442,004	13,160	81	75	4,877	11,812	1,296	1,123	133,332	76,130	5,739	4,765	580,213
Sep-15	51,153	4,700	3,862	476,587	13,154	84	78	4,646	11,705	1,437	1,251	143,267	76,062	6,221	5,191	624,504
Oct-15	51,258	6,350	5,385	691,046	13,163	161	152	14,475	11,684	2,135	1,915	205,116	76,153	8,646	7,452	910,637
Nov-15	51,257	5,665	4,823	692,927	13,170	281	277	25,160	11,682	1,659	1,486	199,536	76,156	7,605	6,586	917,623
Dec-15	51,232	4,920	4,025	629,648	13,176	321	321	32,965	11,669	1,359	1,196	155,587	76,124	6,602	5,544	818,222
Jan-16	51,235	6,547	5,355	749,851	13,163	403	397	40,874	11,658	1,772	1,537	194,785	76,103	8,724	7,291	985,516
Feb-16	51,199	5,945	4,836	694,202	13,169	373	368	46,454	11,609	1,816	1,647	184,901	76,018	8,134	6,851	925,557
Mar-16	51,074	5,459	4,608	611,230	13,182	281	280	25,600	11,565	1,779	1,627	183,269	75,862	7,520	6,516	820,142
Apr-16	51,128	7,346	5,811	863,037	13,200	228	215	27,570	11,579	2,240	1,994	235,489	75,948	9,814	8,020	1,126,166
May-16	51,171	4,396	3,511	492,504	13,217	184	176	15,936	11,581	1,382	1,183	150,764	76,012	5,962	4,870	659,224
Jun-16	51,123	3,704	2,698	472,595	13,228	125	118	7,932	11,589	995	796	121,638	75,981	4,824	3,612	602,165

Table 5: Herd and test numbers – England

	High risk area				Edge area				Low risk area				England			
	Number of cattle herds registered on Sam (1)	Total tests on herds (2)	Tests on officially TB free (OTF) herds (3)	Total cattle tests (4)	Number of cattle herds registered on Sam	Total tests on herds	Tests on officially TB free (OTF) herds	Total cattle tests	Number of cattle herds registered on Sam	Total tests on herds	Tests on officially TB free (OTF) herds	Total cattle tests	Number of cattle herds registered on Sam	Total tests on herds	Tests on officially TB free (OTF) herds	Total cattle tests
2005	29,040	31,615	24,681	3,153,470	9,110	3,232	3,080	190,014	23,865	5,813	5,667	313,183	62,015	40,660	33,428	3,656,667
2006	28,501	33,667	27,358	3,350,061	9,023	4,644	4,483	277,719	23,436	8,480	8,341	458,809	60,960	46,791	40,182	4,086,589
2007	27,466	33,183	26,583	3,512,762	8,627	4,979	4,749	308,840	22,778	8,437	8,278	402,348	58,871	46,599	39,610	4,223,950
2008	27,167	35,287	26,786	3,848,087	8,505	4,781	4,497	320,008	22,708	7,349	7,222	372,490	58,380	47,417	38,505	4,540,585
2009	26,659	37,845	28,578	4,158,654	8,353	5,315	4,929	355,455	22,364	6,981	6,826	314,998	57,376	50,141	40,333	4,829,107
2010	25,965	38,303	28,847	4,512,604	8,443	6,066	5,668	428,467	22,107	8,586	8,381	426,482	56,515	52,955	42,896	5,367,553
2011	25,189	40,536	29,905	4,646,234	7,970	6,016	5,539	491,483	21,134	7,570	7,381	358,334	54,293	54,122	42,825	5,496,051
2012	24,748	47,631	36,628	4,979,450	7,767	7,713	7,181	552,248	21,046	8,155	8,006	325,962	53,561	63,499	51,815	5,857,660
2013	24,503	46,665	35,841	5,045,666	7,902	9,196	8,620	778,103	21,301	8,567	8,346	459,416	53,706	64,428	52,807	6,283,185
2014	23,382	47,501	37,458	5,186,897	7,435	11,220	10,259	1,104,018	20,905	10,188	9,996	636,181	51,722	68,909	57,713	6,927,096
2015	23,065	47,465	36,913	5,427,059	7,235	11,199	10,309	1,118,535	20,932	10,338	10,106	758,376	51,232	69,002	57,328	7,303,970
12 months to end June 2015	22,962	47,169	37,170	5,250,384	7,274	10,970	10,075	1,101,591	20,912	10,363	10,168	716,570	51,148	68,502	57,413	7,068,545
12 months to end June 2016	22,917	44,610	33,734	5,501,806	7,191	10,774	9,821	1,148,873	21,015	9,324	9,067	719,558	51,123	64,708	52,622	7,370,237
Jan-13	24,725	4,600	3,570	464,926	7,771	768	729	53,890	21,036	998	982	47,636	53,532	6,366	5,281	566,452
Feb-13	24,732	4,714	3,663	477,641	7,770	853	815	66,449	21,038	984	966	48,907	53,540	6,551	5,444	592,997
Mar-13	24,753	4,823	3,905	495,488	7,776	956	906	84,868	21,056	929	905	49,275	53,585	6,708	5,716	629,631
Apr-13	24,797	4,374	3,260	503,086	7,784	914	868	82,767	21,087	734	722	32,275	53,668	6,022	4,850	618,128
May-13	24,813	3,992	2,975	395,808	7,810	769	714	68,587	21,149	614	591	29,039	53,772	5,375	4,280	493,434
Jun-13	24,787	2,909	2,071	307,201	7,834	512	472	38,548	21,195	472	453	24,354	53,816	3,893	2,996	370,103
Jul-13	24,720	2,843	1,929	334,091	7,853	597	533	43,035	21,236	506	487	24,100	53,809	3,946	2,949	401,226
Aug-13	24,659	3,220	2,394	336,167	7,860	586	539	42,900	21,260	455	430	22,521	53,779	4,261	3,363	401,588
Sep-13	24,668	3,287	2,507	355,000	7,876	646	599	49,336	21,303	472	461	22,153	53,847	4,405	3,567	426,489
Oct-13	24,655	3,937	3,140	425,859	7,908	772	725	66,212	21,347	679	655	42,542	53,910	5,388	4,520	534,613
Nov-13	24,596	4,471	3,635	537,058	7,913	1,001	942	96,784	21,325	908	895	66,241	53,834	6,380	5,472	700,083
Dec-13	24,503	3,495	2,792	413,341	7,902	822	778	84,727	21,301	816	799	50,373	53,706	5,133	4,369	548,441
Jan-14	24,385	5,027	3,827	569,406	7,894	1,140	1,079	120,446	21,301	1,173	1,147	78,135	53,580	7,340	6,053	767,987
Feb-14	24,355	4,543	3,662	476,832	7,904	1,150	1,071	104,604	21,298	1,057	1,042	71,613	53,557	6,750	5,775	653,049
Mar-14	24,167	4,731	3,888	472,002	7,895	1,304	1,234	133,759	21,314	1,136	1,124	65,946	53,376	7,171	6,246	671,707
Apr-14	24,150	4,130	3,191	449,776	7,912	1,085	1,009	101,344	21,367	858	842	56,221	53,429	6,073	5,042	607,341
May-14	24,141	4,317	3,313	413,810	7,898	1,038	930	84,627	21,394	965	945	51,721	53,433	6,320	5,188	550,158
Jun-14	24,121	3,145	2,358	341,234	7,895	713	598	60,870	21,421	586	565	23,357	53,437	4,444	3,521	425,461
Jul-14	24,031	3,212	2,352	371,125	7,820	656	548	65,855	21,434	581	565	22,146	53,285	4,449	3,465	459,126
Aug-14	24,025	3,006	2,338	326,988	7,803	595	513	52,099	21,454	466	453	20,611	53,282	4,067	3,304	399,698
Sep-14	23,624	3,313	2,627	369,676	7,546	725	656	70,751	21,096	560	542	40,541	52,266	4,598	3,825	480,968
Oct-14	23,388	4,347	3,547	484,908	7,464	934	846	99,250	20,918	764	754	51,363	51,770	6,045	5,147	635,521
Nov-14	23,395	4,446	3,743	505,120	7,466	1,015	965	102,503	20,928	1,059	1,042	78,391	51,789	6,520	5,750	686,014
Dec-14	23,382	3,284	2,612	406,020	7,435	865	810	107,910	20,905	983	975	76,136	51,722	5,132	4,397	590,066
Jan-15	23,033	4,836	3,757	553,492	7,338	1,214	1,137	111,891	20,855	1,248	1,231	87,531	51,226	7,298	6,125	752,914
Feb-15	22,964	4,628	3,713	493,494	7,310	1,057	988	106,489	20,836	1,160	1,143	80,038	51,110	6,845	5,844	680,021
Mar-15	22,928	4,604	3,755	495,294	7,291	1,251	1,190	130,868	20,854	1,094	1,078	87,973	51,073	6,949	6,023	714,135
Apr-15	22,924	4,897	3,794	506,182	7,292	1,183	1,090	114,643	20,876	957	930	75,594	51,092	7,037	5,814	696,419
May-15	22,922	3,422	2,621	360,498	7,280	774	700	74,191	20,889	779	764	58,503	51,091	4,975	4,085	493,192
Jun-15	22,962	3,174	2,311	377,587	7,274	701	632	65,141	20,912	712	691	37,743	51,148	4,587	3,634	480,471
Jul-15	23,009	3,752	2,718	432,439	7,268	832	722	79,932	20,942	730	701	42,235	51,219	5,314	4,141	554,606
Aug-15	22,993	3,175	2,456	356,526	7,218	629	573	54,971	20,905	558	538	30,507	51,116	4,362	3,567	442,004
Sep-15	23,023	3,453	2,702	379,637	7,212	730	659	69,595	20,918	517	501	27,355	51,153	4,700	3,862	476,587
Oct-15	23,058	4,546	3,676	520,893	7,237	1,006	930	96,087	20,963	798	779	74,066	51,258	6,350	5,385	691,046
Nov-15	23,075	3,739	2,979	495,597	7,242	973	908	115,797	20,940	953	936	81,533	51,257	5,665	4,823	692,927
Dec-15	23,065	3,239	2,431	455,420	7,235	849	780	98,930	20,932	832	814	75,298	51,232	4,920	4,025	629,648
Jan-16	23,043	4,369	3,280	545,023	7,237	1,097	1,015	118,581	20,955	1,081	1,060	86,247	51,235	6,547	5,355	749,851
Feb-16	23,034	4,000	2,989	508,910	7,221	1,001	922	106,267	20,944	944	925	79,025	51,199	5,945	4,836	694,202
Mar-16	22,996	3,647	2,879	422,133	7,172	995	930	119,814	20,906	817	799	69,283	51,074	5,459	4,608	611,230
Apr-16	23,021	5,057	3,658	647,905	7,177	1,318	1,215	143,785	20,930	971	938	71,347	51,128	7,346	5,811	863,037
May-16	23,017	2,953	2,173	357,550	7,180	747	668	81,847	20,974	696	670	53,107	51,171	4,396	3,511	492,504
Jun-16	22,917	2,680	1,793	379,773	7,191	597	499	63,267	21,015	427	406	29,555	51,123	3,704	2,698	472,595

Table 6: TB incidents and animals slaughtered – Great Britain

	England				Scotland				Wales				Great Britain (5)			
	Herds not officially TB free at the end of the period due to a bovine TB incident (1)	New herd incidents (NHI) (2)	NHI *of which:* officially TB free herd status withdrawn (OTFW) (3)	Total animals slaughtered (4)	Herds not officially TB free at the end of the period due to a bovine TB incident	New herd incidents (NHI)	NHI *of which:* officially TB free herd status withdrawn (OTFW)	Total animals slaughtered	Herds not officially TB free at the end of the period due to a bovine TB incident	New herd incidents (NHI)	NHI *of which:* officially TB free herd status withdrawn (OTFW)	Total animals slaughtered	Herds not officially TB free at the end of the period due to a bovine TB incident	New herd incidents (NHI)	NHI *of which:* officially TB free herd status withdrawn (OTFW)	Total animals slaughtered
2005	1,799	2,895	1,865	22,847	14	37	13	194	490	732	430	6,783	2,305	3,665	2,308	29,824
2006	1,778	2,719	1,808	16,393	24	44	19	224	567	767	477	5,903	2,369	3,531	2,304	22,520
2007	2,206	3,196	2,042	18,916	22	58	22	515	686	935	485	7,963	2,914	4,190	2,549	27,394
2008	2,832	3,766	2,448	27,815	25	47	18	460	920	1,198	627	11,400	3,777	5,012	3,094	39,675
2009	2,484	3,363	2,283	26,668	20	49	11	357	723	1,186	553	11,671	3,228	4,600	2,848	38,696
2010	2,598	3,632	2,483	24,600	16	45	13	160	711	1,039	513	7,618	3,325	4,721	3,011	32,378
2011	2,982	3,802	2,628	26,467	9	43	8	140	794	1,046	522	8,068	3,804	4,914	3,165	34,675
2012	3,242	3,919	2,867	28,286	26	54	12	418	921	1,109	563	9,289	4,220	5,115	3,452	37,993
2013	3,102	3,890	2,806	26,594	20	28	10	95	635	877	447	6,102	3,793	4,813	3,264	32,791
2014	2,907	3,802	2,789	26,413	28	46	17	240	606	857	525	6,379	3,569	4,716	3,332	33,032
2015	3,106	3,956	2,878	28,033	23	40	10	135	623	838	474	8,093	3,782	4,843	3,364	36,262
12 months to end June 2015	2,858	3,838	2,880	26,157	23	35	8	121	713	884	550	6,647	3,623	4,765	3,439	32,925
12 months to end June 2016	2,942	3,899	2,658	29,805	29	47	11	203	647	740	389	9,476	3,652	4,695	3,060	39,485
Jan-13	3,341	393	267	2,390	30	4	0	4	922	95	44	819	4,326	495	311	3,213
Feb-13	3,299	316	238	2,512	24	0	0	6	905	85	44	596	4,259	401	282	3,114
Mar-13	3,369	383	276	2,476	20	4	1	3	883	98	39	514	4,305	486	316	2,993
Apr-13	3,262	341	248	2,122	20	3	0	2	848	80	40	614	4,161	426	288	2,738
May-13	3,160	315	221	2,621	18	2	1	3	809	85	44	636	4,019	403	266	3,260
Jun-13	3,077	252	160	1,694	18	2	1	2	790	67	31	348	3,919	324	192	2,044
Jul-13	2,957	225	154	2,209	16	1	1	7	721	45	19	507	3,729	273	174	2,723
Aug-13	2,926	272	197	2,085	18	4	2	2	689	51	25	448	3,667	327	224	2,535
Sep-13	2,885	287	222	1,786	17	1	0	9	668	61	32	325	3,605	350	254	2,120
Oct-13	2,933	390	286	2,305	16	2	2	31	665	79	52	531	3,648	472	340	2,867
Nov-13	3,078	423	316	2,321	17	2	1	24	662	76	45	417	3,793	504	363	2,762
Dec-13	3,102	293	221	2,073	20	3	1	2	635	55	32	347	3,793	352	254	2,422
Jan-14	3,158	428	311	2,299	21	3	2	10	653	101	55	635	3,862	534	368	2,944
Feb-14	3,151	356	251	2,159	24	4	1	8	661	68	37	845	3,865	429	289	3,012
Mar-14	3,139	342	245	2,425	35	13	6	20	662	79	45	472	3,865	436	296	2,917
Apr-14	2,999	289	191	2,306	36	2	0	57	647	69	34	518	3,713	363	226	2,881
May-14	2,883	284	184	2,180	36	5	1	33	656	84	44	543	3,605	373	229	2,756
Jun-14	2,777	210	152	2,184	35	3	2	47	631	51	31	427	3,471	264	185	2,658
Jul-14	2,686	262	204	1,819	31	2	0	33	625	59	41	476	3,371	324	245	2,328
Aug-14	2,588	255	196	1,683	28	1	0	2	590	40	26	264	3,235	296	222	1,949
Sep-14	2,587	297	226	2,111	28	5	1	13	562	59	42	436	3,205	362	269	2,560
Oct-14	2,700	374	288	2,296	25	1	0	6	579	98	69	627	3,331	473	357	2,929
Nov-14	2,853	410	305	2,201	25	3	2	5	602	86	56	530	3,508	500	363	2,736
Dec-14	2,907	295	236	2,750	28	4	2	6	606	63	45	606	3,569	362	283	3,362
Jan-15	3,012	379	273	2,339	27	3	0	9	661	109	72	655	3,727	492	345	3,003
Feb-15	3,043	346	258	2,300	29	6	1	15	693	88	52	654	3,793	441	311	2,969
Mar-15	3,069	369	275	2,483	31	4	1	16	718	84	55	535	3,846	457	331	3,034
Apr-15	3,024	325	248	1,995	25	3	1	6	730	82	38	581	3,807	411	287	2,582
May-15	2,947	267	184	2,109	24	1	0	5	731	66	30	746	3,730	334	214	2,860
Jun-15	2,858	259	187	2,071	23	2	0	5	713	50	24	537	3,623	313	212	2,613
Jul-15	2,837	305	215	2,354	25	6	1	8	689	68	36	701	3,580	379	252	3,063
Aug-15	2,850	257	191	2,092	28	5	2	3	670	57	31	570	3,576	320	224	2,665
Sep-15	2,782	279	214	2,344	26	2	2	35	626	41	22	637	3,463	323	238	3,016
Oct-15	2,883	413	299	2,501	24	2	1	4	638	83	52	711	3,576	500	353	3,216
Nov-15	3,047	413	287	2,644	23	4	1	9	634	63	32	726	3,734	480	320	3,379
Dec-15	3,106	344	247	2,801	23	2	0	20	623	47	30	1,040	3,782	393	277	3,862
Jan-16	3,217	392	254	2,331	24	6	0	8	622	66	38	798	3,893	464	292	3,137
Feb-16	3,252	357	235	2,823	30	6	0	30	641	83	51	900	3,953	446	286	3,753
Mar-16	3,192	307	218	2,835	30	3	1	6	663	65	25	754	3,915	376	244	3,595
Apr-16	3,124	362	231	2,278	26	2	1	21	658	61	30	803	3,841	428	263	3,102
May-16	3,052	255	148	2,692	26	5	0	16	653	52	19	787	3,765	313	167	3,495
Jun-16	2,942	215	119	2,110	29	4	2	43	647	54	23	1,049	3,652	273	144	3,202

Table 7: TB incidents and animals slaughtered – England

	High risk area				Edge area				Low risk area				England			
	Herds not officially TB free at the end of the period due to a bovine TB incident (1)	New herd incidents (NHI) (2)	NHI *of which:* officially TB free herd status withdrawn (OTFW) (3)	Total animals slaughtered (4)	Herds not officially TB free at the end of the period due to a bovine TB incident	New herd incidents (NHI)	NHI *of which:* officially TB free herd status withdrawn (OTFW)	Total animals slaughtered	Herds not officially TB free at the end of the period due to a bovine TB incident	New herd incidents (NHI)	NHI *of which:* officially TB free herd status withdrawn (OTFW)	Total animals slaughtered	Herds not officially TB free at the end of the period due to a bovine TB incident	New herd incidents (NHI)	NHI *of which:* officially TB free herd status withdrawn (OTFW)	Total animals slaughtered
2005	1,722	2,696	1,763	22,040	34	101	53	354	43	98	49	453	1,799	2,895	1,865	22,847
2006	1,681	2,492	1,697	15,757	62	136	73	356	35	91	38	280	1,778	2,719	1,808	16,393
2007	2,114	2,980	1,957	17,651	55	131	51	733	37	85	34	532	2,206	3,196	2,042	18,916
2008	2,687	3,495	2,346	25,812	105	181	67	1,385	40	90	35	618	2,832	3,766	2,448	27,815
2009	2,344	3,074	2,172	24,726	97	200	71	1,214	43	89	40	728	2,484	3,363	2,283	26,668
2010	2,441	3,274	2,342	22,971	102	226	95	1,016	55	132	46	613	2,598	3,632	2,483	24,600
2011	2,786	3,466	2,486	24,938	149	238	112	1,070	47	98	30	459	2,982	3,802	2,628	26,467
2012	3,029	3,582	2,697	26,876	155	234	131	1,199	58	103	39	211	3,242	3,919	2,867	28,286
2013	2,850	3,480	2,609	24,616	195	301	158	1,518	57	109	39	460	3,102	3,890	2,806	26,594
2014	2,663	3,343	2,560	22,706	205	351	193	3,024	39	108	36	683	2,907	3,802	2,789	26,413
2015	2,817	3,454	2,650	24,676	227	344	177	2,746	62	158	51	611	3,106	3,956	2,878	28,033
12 months to end June 2015	2,556	3,392	2,667	22,778	234	313	170	2,804	68	133	43	575	2,858	3,838	2,880	26,157
12 months to end June 2016	2,578	3,364	2,432	26,185	295	384	183	2,949	69	151	43	671	2,942	3,899	2,658	29,805
Jan-13	3,110	355	250	2,232	162	23	11	112	69	15	6	46	3,341	393	267	2,390
Feb-13	3,068	285	222	2,340	168	24	12	114	63	7	4	58	3,299	316	238	2,512
Mar-13	3,124	345	262	2,273	180	27	9	123	65	11	5	80	3,369	383	276	2,476
Apr-13	3,013	296	227	2,015	182	32	16	86	67	13	5	21	3,262	341	248	2,122
May-13	2,912	286	209	2,451	172	17	8	146	76	12	4	24	3,160	315	221	2,621
Jun-13	2,820	207	137	1,555	182	36	19	89	75	9	4	50	3,077	252	160	1,694
Jul-13	2,712	201	141	2,049	180	19	11	143	65	5	2	17	2,957	225	154	2,209
Aug-13	2,693	246	181	1,959	173	21	14	90	60	5	2	36	2,926	272	197	2,085
Sep-13	2,646	252	198	1,646	177	24	18	101	62	11	6	39	2,885	287	222	1,786
Oct-13	2,705	362	274	2,070	168	19	11	202	60	9	1	33	2,933	390	286	2,305
Nov-13	2,837	380	296	2,087	182	35	20	200	59	8	0	34	3,078	423	316	2,321
Dec-13	2,850	265	212	1,939	195	24	9	112	57	4	0	22	3,102	293	221	2,073
Jan-14	2,900	376	283	2,054	215	41	25	205	43	11	3	40	3,158	428	311	2,299
Feb-14	2,867	296	223	1,908	241	49	25	215	43	11	3	36	3,151	356	251	2,159
Mar-14	2,812	278	206	1,977	272	48	31	385	55	16	8	63	3,139	342	245	2,425
Apr-14	2,656	244	175	1,875	294	39	14	384	49	6	2	47	2,999	289	191	2,306
May-14	2,539	236	169	1,679	290	33	13	310	54	15	2	191	2,883	284	184	2,180
Jun-14	2,447	183	139	1,789	276	19	10	289	54	8	3	106	2,777	210	152	2,184
Jul-14	2,387	240	190	1,596	254	18	13	183	45	4	1	40	2,686	262	204	1,819
Aug-14	2,315	233	183	1,554	231	15	9	117	42	7	4	12	2,588	255	196	1,683
Sep-14	2,321	257	206	1,889	224	29	17	175	42	11	3	47	2,587	297	226	2,111
Oct-14	2,447	348	274	2,078	210	20	13	196	43	6	1	22	2,700	374	288	2,296
Nov-14	2,606	381	288	1,909	207	21	11	259	40	8	6	33	2,853	410	305	2,201
Dec-14	2,663	271	224	2,398	205	19	12	306	39	5	0	46	2,907	295	236	2,750
Jan-15	2,747	322	253	2,078	215	37	15	218	50	20	5	43	3,012	379	273	2,339
Feb-15	2,768	298	239	1,918	219	33	15	344	56	15	4	38	3,043	346	258	2,300
Mar-15	2,769	316	245	2,170	235	33	21	270	65	20	9	43	3,069	369	275	2,483
Apr-15	2,716	279	228	1,652	241	35	16	245	67	11	4	98	3,024	325	248	1,995
May-15	2,638	223	168	1,769	236	24	12	267	73	20	4	73	2,947	267	184	2,109
Jun-15	2,556	224	169	1,767	234	29	16	224	68	6	2	80	2,858	259	187	2,071
Jul-15	2,538	262	201	2,069	238	32	11	245	61	11	3	40	2,837	305	215	2,354
Aug-15	2,570	238	183	1,933	220	13	7	137	60	6	1	22	2,850	257	191	2,092
Sep-15	2,497	239	190	2,094	228	29	19	222	57	11	5	28	2,782	279	214	2,344
Oct-15	2,600	377	281	2,242	222	22	13	188	61	14	5	71	2,883	413	299	2,501
Nov-15	2,753	363	263	2,437	231	37	19	187	63	13	5	20	3,047	413	287	2,644
Dec-15	2,817	313	230	2,547	227	20	13	199	62	11	4	55	3,106	344	247	2,801
Jan-16	2,895	326	221	2,031	251	44	26	219	71	22	7	81	3,217	392	254	2,331
Feb-16	2,917	302	215	2,467	259	39	18	331	76	16	2	25	3,252	357	235	2,823
Mar-16	2,844	260	197	2,404	267	31	16	330	81	16	5	101	3,192	307	218	2,835
Apr-16	2,762	303	206	1,970	287	50	23	278	75	9	2	30	3,124	362	231	2,278
May-16	2,683	205	134	2,214	296	37	11	343	73	13	3	135	3,052	255	148	2,692
Jun-16	2,578	176	111	1,777	295	30	7	270	69	9	1	63	2,942	215	119	2,110

Notes (applicable to all geographical areas)

Herd and test numbers

(1) The number of herds registered on the APHA's Sam (computer) system. Occasionally there are changes to the number of herds registered on Sam. This is the result of routine or ad hoc data cleansing.
(2) Herds for which tuberculin skin testing is carried out on at least one animal during the period shown. Does not include the supplementary interferon-gamma blood tests, which are performed in herds already under TB restrictions.
(3) Herds for which tuberculin skin testing is carried out on at least one animal during the period shown and when the herd is OTF. Does not include interferon-gamma tests.
(4) Count of the number of tests on cattle. An individual animal could be tested more than once in each time period. Includes a minority of interferon-gamma blood tests.
(5) For some statistics the region or disease status is unknown. For this reason the data shown for England, Scotland and Wales will not sum to the GB figure.

TB incidents and animals slaughtered

(1) Herds which were not officially TB-free (i.e. herds with OTF status suspended or withdrawn) due to a TB incident, at the end of the period shown.
(2) Herds which were previously OTF, but either had cattle that reacted to a tuberculin test or a tuberculous animal disclosed by routine meat inspection at slaughter, during the period shown.
(3) New herd incidents where OTF status was withdrawn from the herd.
(4) Reactors slaughtered + inconclusive reactors slaughtered + direct contacts slaughtered.
(5) For some statistics the region or disease status is unknown. For this reason the data shown for England, Scotland and Wales will not sum to the GB figure.

The statistics are a snapshot of the position on the date on which the data were extracted. The statistics from January 2014 are revised monthly.

In addition there are a number of incidents between May and December 2011 which remain unclassified. This followed the transition to APHA's current computer system Sam. This affects only a small number of records and work in 2015 and early 2016 to investigate these incidents has reduced this number substantially.

Figure 7: Comparison of the new and old measures of herd incidence of bovine TB in GB, since 1996

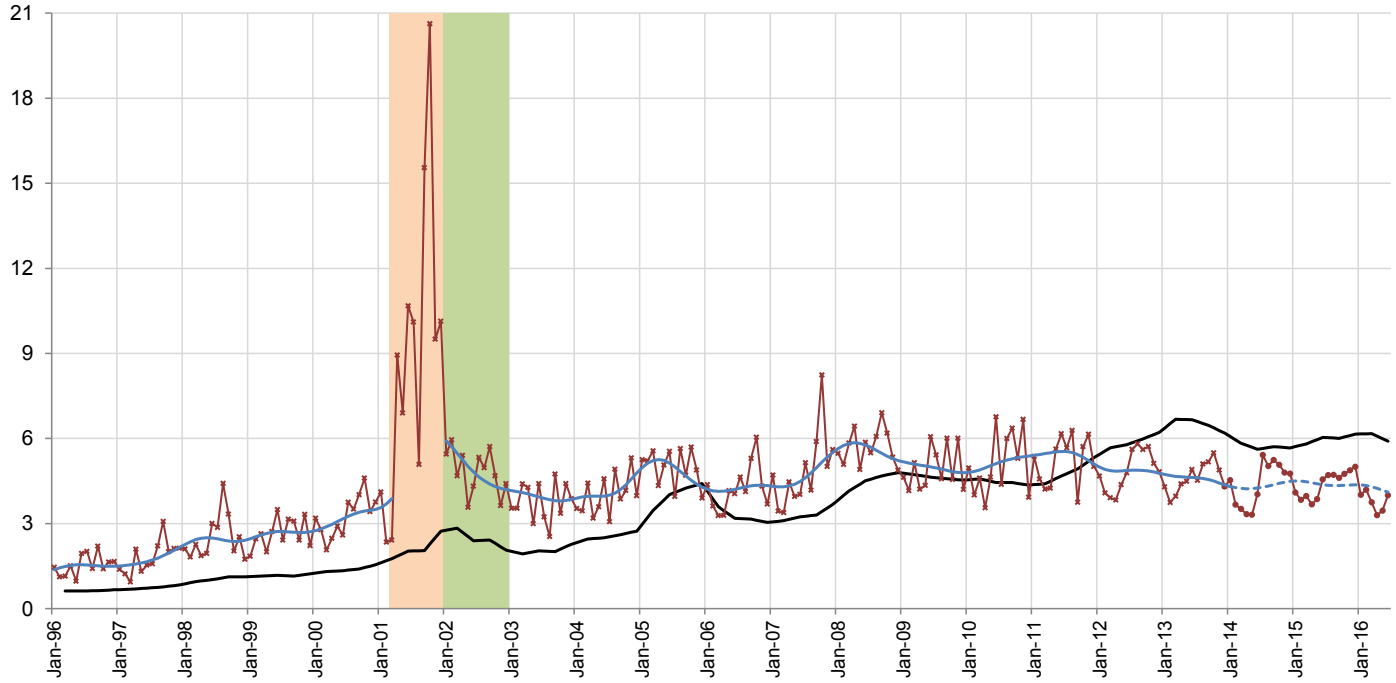
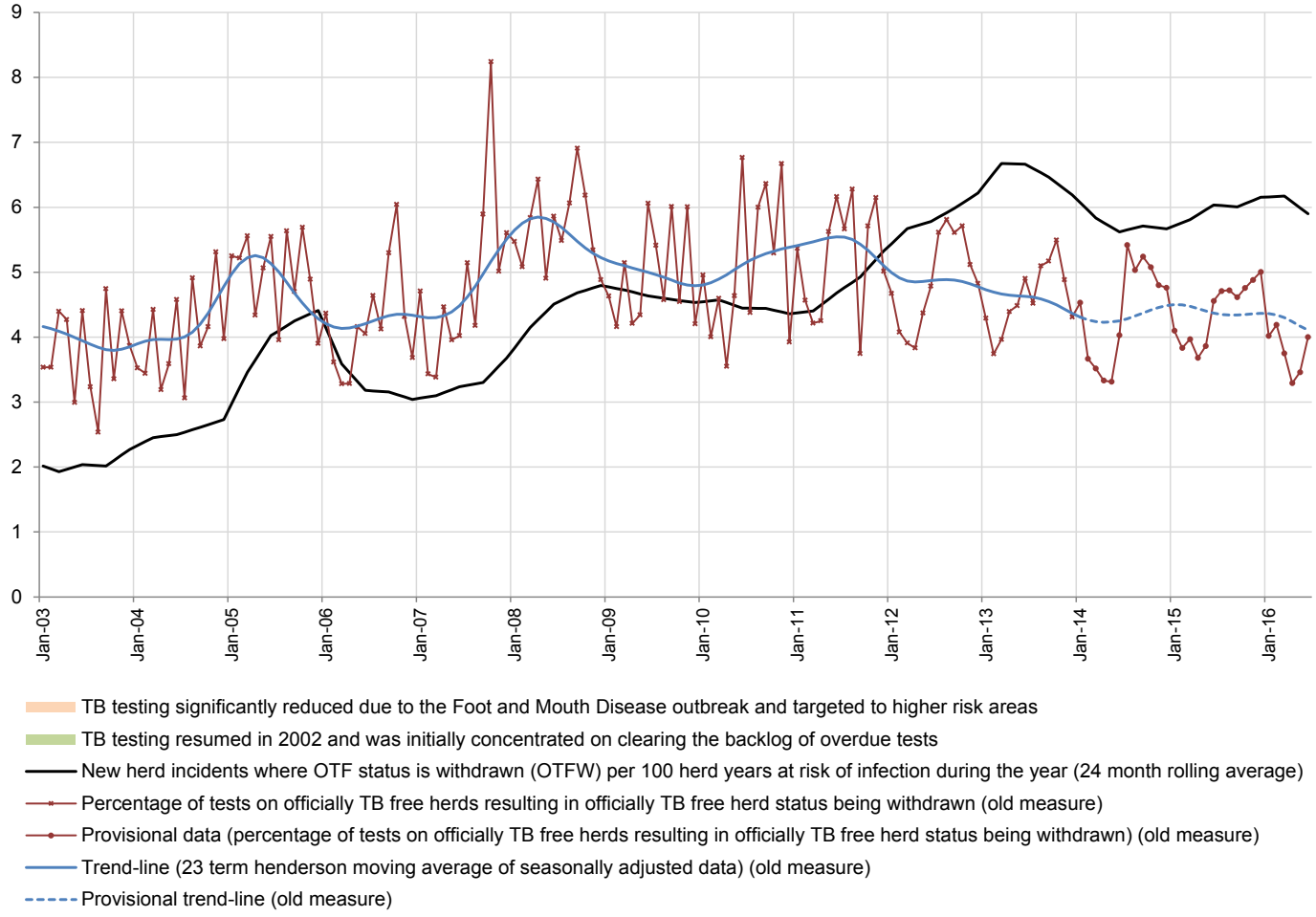


Figure 8: Comparison of the new and old measures of herd incidence of bovine TB in GB, since 2003



These charts present two ways of measuring herd incidence:

- The previous herd incidence measure presented incidents where OTF status was withdrawn as a percentage of tests on OTF herds
- The new incidence rate is OTFW incidents per 100 herd years at risk

The two measures follow a fairly similar pattern over time with a gradual increase from the beginning of the time series. The previous measure showed a general decline from around 2012, driven largely by an increase in the amount of testing carried out in herds which resulted in an artificial decrease in herd incidence. The new measure appears to be showing a decline since mid-2013. The increase in the new measure relative to the previous one from 2011 onwards is likely to be the result of the inclusion of Welsh herds where OTF status can be withdrawn for epidemiological reasons in the absence of confirmation of TB via post-mortem examination or bacteriological culture, described above.

What is bovine tuberculosis?

Bovine tuberculosis (bTB) is a chronic infectious disease of cattle[2]. The risk bTB poses to human health is low, largely due to milk pasteurisation. The disease is detected either on farms (through mandatory skin tests[3] of cattle herds for bTB at regular intervals) and at abattoirs (through post-mortem meat inspection of cattle carcases).

What are the impacts of bTB?

Bovine TB presents serious challenges to the food and farming industries and has economic and social impacts. The economic costs of a bTB breakdown[4] are shared by farmers and government; in 2012 the estimated average cost of a confirmed herd breakdown in high risk areas of England was £14,000 to farmers and £20,000 to government[5]. Costs are incurred for a number of reasons:

- Cattle which are found (or are highly likely) to have bTB are slaughtered. This loses the farmer the value of the animal and its output. Government pays farmers compensation for slaughtered animals which is based on the market value of cattle.

- There are costs associated with testing animals for bTB. Farmers incur costs from gathering animals together, such as paying workers for their time, and government pays the vets' fees for carrying out tests on the herd (and in the event of a breakdown on herds in neighbouring farms).

- When an animal in a herd tests positive for the disease, the whole herd is put under movement restrictions until all the remaining animals are tested repeatedly with negative results. This presents costs to farmers, for example because they are unable to move their cattle to market or buy in replacements for animals that are slaughtered.

Other impacts of high bTB levels can include:

- Restrictions on international trade in cattle and cattle products.
- Significant stress amongst famers, their families and local communities[6]
- The infection spilling over to domestic and wild animals [7].

[2] bTB is caused by the bacterium *Mycobacterium bovis* (*M. bovis*). Cattle are the natural host of the bacterium, but many other species, including wildlife such as badgers and (less commonly) deer, are also susceptible to *M. bovis* ,can develop TB and transmit the infection to other species.
[3] the tuberculin skin test: if tuberculin (a purified sterile cocktail of proteins derived from *M. bovis* cultures) is injected into the skin of an animal infected with *M. bovis*, this will cause a localised allergic reaction characterised by temporary swelling of the skin, which is measured 72hrs after the injection. The principle is very similar to the skin tests for TB in humans.
[4] A *breakdown* is the term used to describe the occurrence in a herd of at least one animal with a positive reaction to the skin test, or the identification of *M. bovis* in an animal with TB lesions detected at routine slaughter. The affected herd is then placed under restrictions and loses its Officially TB Free (OTF) status.
[5] Economic analysis based on research report SE3112 for Defra, 2004
[6] See for example research report SE3120 for Defra, 2008
[7] For example Broughan, J. M., Downs, S. H., Crawshaw, T. R., Upton, P. A., Brewer, J. & Clifto-Hadley, R. S. (2013) *Mycobacterium bovis* infections in domesticated non-bovine mammalian species. Part 1: review of epidemiology and laboratory submissions in Great Britain 2004-2010. *Veterinary Journal* **198**, 346-35. See also http://webarchive.nationalarchives.gov.uk/20140405112558/http:/www.defra.gov.uk/ahvla-en/publication/pub-survreport-tb/

Why monitor statistics about bTB?

Legal requirements: EU Member States are legally required to have accelerated bTB eradication plans in place in order to achieve officially TB free (OTF) status[8]. Defra and Welsh Government policy is to achieve OTF status for the whole country by 2038, while Scotland achieved OTF status in September 2009. bTB statistics are used in England and Wales to measure progress towards this target, and to support the annual case for Scotland to retain its OTF status, as the qualification is based on herd incidence.

Monitoring policy effectiveness: Statistics on the incidence of bTB in cattle herds and the number of cattle slaughtered as a result of bTB are used by policymakers to monitor the spread and concentration of the disease and to inform decisions around the potential approaches to controlling it. Existing controls include routine testing in cattle based on the disease incidence (or risk) in a given area, restricting movements of cattle from herds where an animal has tested positive for the disease and addressing the problem of disease spread through wildlife (principally badgers).

Factors affecting statistics on incidence of bTB in cattle herds

Variation in the monthly statistics can occur for a number of reasons, including:

- **Disease**: an increase in the trend can be the result of a higher proportion of herds experiencing a breakdown because of an increase in the underlying incidence of bTB.

- **Surveillance policy** (including the frequency of testing): Cattle herds in high risk areas[9] are tested annually and cattle herds in low risk areas are usually tested every four years. In Scotland, which is OTF, a growing percentage of herds are exempt from routine testing. If cattle herds in a low prevalence region are tested more frequently than every four years, the increase in the number of bTB tests will not necessarily be followed by a similar increase in the detection of infected cattle and so this may result in a decline in the incidence rate.

- **Seasonality**: more animals are tested when they are housed, during winter months, compared with when they are grazing outdoors in summer months. This is simply because it is easier to gather and test the cattle when they are already contained within a building. The blue trend line in Figures 1 and 2 account for this by presenting seasonally adjusted data.

- Number of **testing days** in a given month: tests tend to be carried out at the beginning of the working week and the results collected and entered into the data system towards the end of the week. Months containing five Fridays may therefore have more positive test results than months containing four.

An extreme example of the impact of testing on the incidence rate can be seen in the statistics for 2001, when bTB testing was significantly reduced for most of the year due to the outbreak of Foot and Mouth Disease but new bTB breakdowns continued to be detected through disease surveillance in abattoirs. This led to an unusually high incidence rate for 2001 and 2002, when

[8] "OTF Status" takes its meaning from European law: for a region or Member State of the EU to be considered to be OTF the annual incidence of herds with confirmed *M. bovis* infection must not have exceeded 0.1% and at least 99.9% of the herds within it must have been free from bTB at the end of the year for at least six consecutive years.

[9] South West, West Midlands and East Sussex, where the majority of TB cases are found and where the prevalence (probability) of TB-infected cattle and badgers is relatively high.

effectively two years' worth of breakdowns were identified in one year when the normal testing regime resumed.

Surveillance policy in GB

These statistics are presented for GB, but the bTB surveillance and control policy – including how frequently animals are tested for bTB – varies between England, Wales and Scotland and has changed over time.

Timeline:

- **1990s**: most herds in GB tested every four years and background testing intervals determined on a parish basis. Herds in parishes with a high incidence of bTB breakdowns (in the South West of England and in parts of Wales) are tested on an annual or biennial basis, with a smaller number of three-yearly testing herds.

- **2004 to 2010**: the proportion of parishes and herds in England and Wales with annual testing increases gradually as the disease spread, with a corresponding decrease in the proportion of parishes with four-yearly testing.

- **October 2009**: the European Commission designates Scotland as an officially bTB free region of the UK.

- **January 2010**: In England, a core annual testing area is established, spanning entire counties in the South West and West Midlands (the 'high risk area') and surrounded by a 'buffer' of two-yearly testing parishes. Most of the rest of England remains on background four-year testing. The Welsh Government puts all cattle herds in Wales on annual bTB testing (with herds in the small Intensive Action Area of West Wales put on 6-monthly bTB testing).

- **2011 and 2012**: further expansion of the annual testing area in England to the east and north.

- **January 2013**: herd testing intervals are determined on a county basis and England is split into annual testing and four-yearly testing counties. Annual testing of herds is extended to all the counties at the edge of the high risk area (more detail below). Three- and two-yearly testing is abolished.

- **January 2015**: all cattle herds in the edge area of Cheshire are put on six-monthly testing.

Current differences in surveillance policy in GB

- **England** is divided into two cattle bTB testing frequency areas that broadly reflect the geographically clustered nature of the disease. The majority of bTB breakdowns are found in the High Risk Area and the Edge Area (counties of the South West, West Midlands and East Sussex). These herds are tested for bTB annually (or every six months in the Edge Area of Cheshire) and represent nearly 60% of all herds in England. In the rest of England most herds are tested every four years. Herds that have a high risk of contracting bTB or present a

potential public health risk (e.g. producer-retailers of unpasteurised milk) are tested annually regardless of their location.

- All herds in **Wales** are tested annually.
- **Scotland** has in place a risk-based routine herd testing policy. This targets testing at higher risk herds. Around 45 per cent of herds are considered low risk herds and are exempt from routine testing. These are herds which have 20 or fewer animals, minimal import of animals from high risk areas and send a high proportion of animals to slaughter. Herds that are not exempt are tested every four years.

More information on bovine TB can be found at:

England: https://www.gov.uk/government/policies/reducing-bovine-tuberculosis

Wales: http://gov.wales/topics/environmentcountryside/ahw/disease/bovinetuberculosis/?lang=en

Scotland: http://www.scotland.gov.uk/Topics/farmingrural/Agriculture/animal-welfare/Diseases/disease/tuberculosis

Methodology

For a description of the data sources and methodology used in the calculation of the TB statistics, together with notes on data revisions policy etc., please refer to the 'Background and Methodology' annex document at https://www.gov.uk/government/statistics/data-and-methodology.

Further Information

This statistical notice and a wide range of other statistics are available on the internet at: https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs/about/statistics