



Animal &
Plant Health
Agency

Bovine TB in cattle: badger control areas monitoring report

For the period 2013 - 2017

September 2018

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Any enquiries regarding this publication should be sent to us at:

FAO: SE3131 Project Team

Department of Epidemiological Sciences

Animal and Plant health Agency

Weybourne Building, Level 2, Area E, Woodham Lane, Addlestone, Surrey, KT15 3NB

enquiries@apha.gsi.gov.uk

www.gov.uk/apha

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The Animal and Plant Health Agency (APHA) is an executive agency of the Department for Environment, Food & Rural Affairs, and also works on behalf of the Scottish Government and Welsh Government.

Data correction:

The table for the prevalence measure for Area 01 - Gloucestershire buffer (p9) has been updated with corrected data for herds and prevalence.

The associated graph remains unchanged.

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Introduction

The badger control policy was implemented in England with an aim of reducing the population of badgers, a known carrier of bovine tuberculosis (TB), to reduce the potential for transmission between badgers and cattle, and therefore cause a subsequent reduction in TB incidence in cattle. The policy is based upon evidence generated by the Randomised Badger Control Trial (RBCT) conducted in England between 1998 and 2005. This trial indicated that the incidence of confirmed TB in cattle could be reduced by 23.2% (95% CI: 12.4% to 32.7%) over a four year period if badger culling was performed systematically over large areas and sustained for at least four years¹. Culling badgers was found to be associated with both positive effects on TB incidence in the cull areas and negative effects in the surrounding 2 km buffers.

The current badger control policy includes the licencing of industry-led badger culling² from 2013 and provision of biosecurity advice to farmers in licenced areas since 2014. From April 2017 where badger control operations have been completed for a minimum of two years, mandatory interferon-gamma testing was introduced in addition to tuberculin skin testing. In 2013, two licences were issued under the Protection of Badgers Act 1992 to groups of farmers and landowners in Gloucestershire and Somerset. A further licence was issued in Dorset in 2015. In 2016 a further seven licences were issued. Since then the policy has expanded and at the time of writing this report, includes a total of 21 areas across the High Risk and Edge Areas of England.

APHA is commissioned by Defra to monitor the incidence of TB in cattle in the areas that have been issued licences for badger control. To address this requirement APHA publishes monitoring results showing the frequency of TB infection in cattle herds in the badger control areas. In addition, APHA undertakes rigorous analysis to measure any association between badger control and cattle TB incidence in comparison to other areas not subject to the badger control policy and adjusting for differences between the areas which are related to the risk of TB in cattle³.

¹ Donnelly C.A., Wei G., Johnston W.T., Cox D.R., Woodroffe R., Bourne F.J., Cheeseman C.L., Clifton-Hadley R.S., Gettinby G., Gilks P., Jenkins H.E., Le Fevre A.M., McInerney J.P., Morrison W.I. (2007) Impacts of widespread badger culling on cattle tuberculosis: concluding analyses from a large-scale field trial. *Int J Infect Dis.* 11(4):300-8.

² <https://www.gov.uk/government/publications/guidance-to-natural-england-preventing-spread-of-bovine-tb>

³ Brunton L.A., Donnelly C.A., O'Connor H., Prosser A., Ashfield A., Ashton A., Upton P., Mitchell A., Goodchild A.V., Parry J.E., Downs S.H (2017) Assessing the effects of the first two years of industry-led badger culling in England on the incidence of bovine tuberculosis in cattle in 2013-15. *Ecology and Evolution* 7(18):7213-30
<http://onlinelibrary.wiley.com/doi/10.1002/ece3.3254/full>

Purpose of this report

This report provides the annual TB monitoring data and results for each of the badger control licenced areas and their buffer areas up to the end of 2017. New badger control areas will be included in subsequent reports once they have at least one year of follow-up data available. The report shows the Officially Tuberculosis Free – withdrawn (OTF-W) incidence and OTF-W prevalence in badger control areas but these data alone cannot demonstrate whether the badger control policy is effective in reducing bovine TB in cattle. Rigorous analysis is underway to measure any association between badger control and cattle TB incidence in comparison to areas not subject to the badger control policy and adjusting for differences between the areas which are related to the risk of TB in cattle. A paper will be submitted to a peer review journal later in the year.

Monitoring Methods

Badger control areas

Central areas

This is the area which is licenced by Natural England for badger control operations. These areas are defined and provided by Natural England and remain stable over time.

Buffer areas

Buffer areas are 2km wide areas that immediately surround the central area. They are identified by the APHA project team using the central area boundary information provided by Natural England. The size of available buffers varies between areas at the baseline (defined below) and the integrity of buffer areas are likely to decrease over time. These buffer area changes (defined in the table below) are reported for each of the licensed badger control buffer areas in the data section.

Buffer area changes table	
% 2km buffer area available at start	<p>This shows how much of a complete 2km buffer area was available on the baseline date for each area. This can be less than 100% for two reasons</p> <ol style="list-style-type: none">1. Central areas are coastally located and only part of the 2km buffer area falls on land.2. The identified buffer area overlaps an existing badger control area and therefore herds in the overlap area are central area herds for that area and cannot remain as buffer herds.
% of original buffer area available	<p>This shows how much of the buffer area which was available at the start remains for monitoring over the time periods. It shows whether there has been any loss of area from the buffer due to the creation of new adjacent badger control areas.</p> <p>In future years, some buffer areas may be too small to warrant further monitoring and this will be apparent in this table.</p> <p>Only those herds which remain as buffer area herds in the current time period are included in the current and retrospective monitoring data provided.</p>

Time period

The baseline date

Each area has an identified baseline date. This is the date of the start of the first cull in the particular area.

Monitoring herd groups

Cohort

Central and buffer cohort groups of herds are identified based on the herd location map reference data as it was recorded on the baseline date. Over time some of the herds in the cohort become inactive and are lost to follow-up. This means that the number of herds in the cohort can decrease between years. The number cannot, by definition, increase.

The herds reported on in this group were all in existence on the baseline date and therefore have been exposed to badger control operations for the full follow-up period.

Herds in Existence

The herds in existence group for the central area is an annual snapshot of active herds that fall within the central area based on the herd location map reference data as recorded at that time of the snapshot (not historic herd location map reference data which are not readily available).

This annual count of herds recognises that there are new herds that come into existence, after the baseline data or existed prior to the baseline date. In the data tables these are identified as herds in existence (HIE).

The herds reported on in this group were not all in existence on the baseline date and therefore have not been exposed to badger control operations for the full follow-up period.

OTF-W Incidence Table

New breakdowns - All	The total number of new breakdowns Officially Tuberculosis Free – withdrawn (OTF-W) and Officially Tuberculosis Free – suspended (OTF-S) and OTF-W) experienced during the time period.
New breakdowns - OTF-W	The total number of new OTF-W breakdowns experienced during the time period.
Herds	The number of herds active in the area in each group (described above) at the start of each period.
Time at risk (TAR)	The total period of time the herds in that area (above) were considered at risk of TB infection. Herds are considered to be at risk of infection when they are not under trading restrictions because of TB infection in the herd ⁴
OTF-W incidence rate	<p>The incidence rate is the rate of occurrence of new breakdowns and therefore reflects the risk of breakdown.</p> <p>The incidence of OTF-W breakdowns is used as the primary outcome for monitoring rather than total TB incidence because the RBCT showed an association between OTF-W incidence and culling⁵.The incidence rate is calculated as the number of herd TB breakdowns per 100 herd years at risk. This is the number of new OTF-W breakdowns detected in the area during the time period of interest divided by time at risk. This rate is also used in the National Statistics for bovine TB.</p>
95% confidence interval	<p>The lower and upper confidence limits of a 95% confidence interval for the calculated OTF-W incidence rate are given.</p> <p>If data were collected and the 95% confidence interval were calculated independently multiple times, we would expect the true OTF-W incidence rate to be found within 95% of these confidence intervals.</p> <p>This calculated interval gives an indication of the level of uncertainty</p>

⁴ Downs S.H, Clifton-Hadley R.S, Upton P.A, Milne I.C, Ely E.R, Gopal R, Goodchild A.V, Sayers A.R. (2013). Tuberculin manufacturing source and breakdown incidence rate of bovine tuberculosis in British cattle, 2005-2009. *Veterinary Record*. 172(4):98

	around the estimate of OTF-W incidence rate.
Accompanying figure	This graph shows the OTF-W incidence rate for the groups of interest for the periods before and after the baseline date for each area. The 95% confidence intervals from those estimates are also shown. The shaded blue area shows the confidence intervals for the cohort herds while the dotted lines represent the confidence intervals for the HIE.

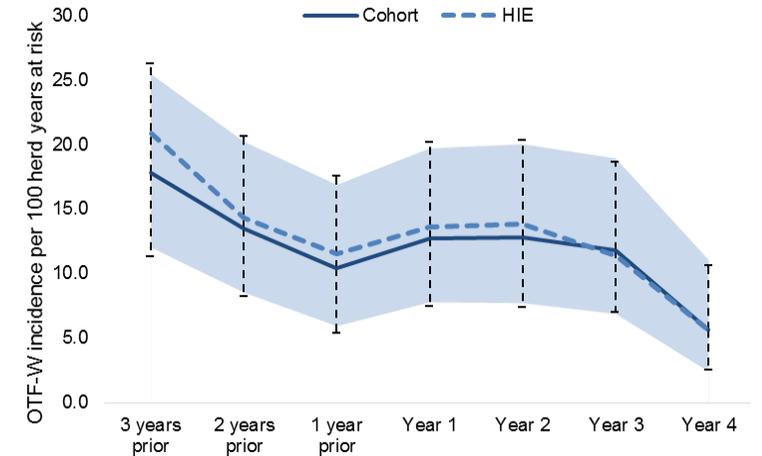
OTF-W Prevalence Table	
Herds under restriction – All	The number of herds under TB-related trading restrictions for any breakdown on the last day of the reporting period.
Herds under restriction - OTF-W	The number of herds under trading restrictions due to an OTF-W breakdown on the last day of the reporting period.
Herds	The number of herds in existence in the area at the end of each period.
OTF-W prevalence	<p>This is a <u>point prevalence</u> estimate indicating how widespread OTF-W breakdowns are.</p> <p>OTF-W prevalence is calculated as the number of herds under trading restrictions on the last date of each period due to an OTF-W breakdown per 100 herds in existence on the same date.</p>
95% confidence interval	<p>The lower and upper confidence limits of a 95% confidence interval for the calculated OTF-W prevalence are given. If data were collected and the 95% confidence interval were calculated independently multiple times, we would expect the true OTF-W prevalence to be found within 95% of these confidence intervals.</p> <p>This calculated interval gives an indication of the level of uncertainty around the estimate of OTF-W prevalence.</p>
Accompanying figure	This graph shows the OTF-W prevalence for the groups of interest for the periods before and after the baseline date for each area. The 95% confidence intervals from those estimates are also shown. The shaded blue area shows the confidence intervals for the cohort herds while the dotted lines represent the confidence intervals for the HIE.

Individual area monitoring data

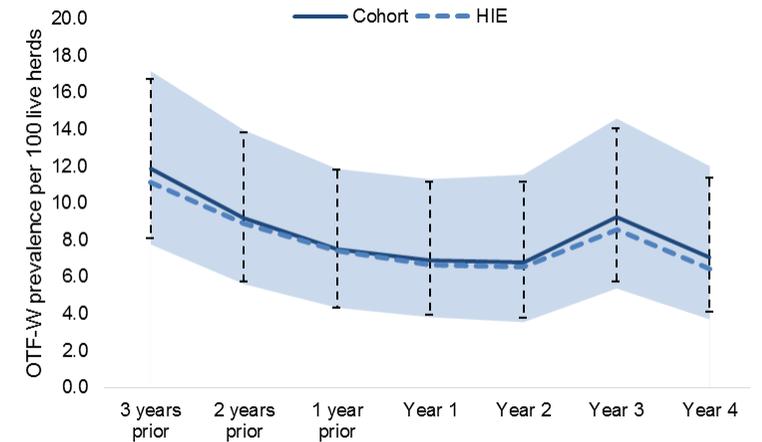
The following pages provide the data described for each of the licenced badger control central and buffer areas.

Area 01 - Gloucestershire central

Area	Year	New breakdowns			TAR	OTF-W incidence rate	95% confidence interval	
		All	OTF-W	Herds			Lower	Upper
Cohort	3 years prior	41	30	199	168.3	17.8	12.0	25.5
	2 years prior	31	23	202	170.7	13.5	8.5	20.2
	1 year prior	18	16	207	154.0	10.4	5.9	16.9
	Year 1	29	20	214	156.8	12.8	7.8	19.7
	Year 2	24	19	202	148.2	12.8	7.7	20.0
	Year 3	23	17	177	143.9	11.8	6.9	18.9
	Year 4	15	8	173	142.6	5.6	2.4	11.1
HIE	3 years prior	44	33	233	158.4	20.8	14.3	29.3
	2 years prior	31	23	225	160.4	14.3	9.1	21.5
	1 year prior	18	16	214	138.8	11.5	6.6	18.7
	Year 1	29	20	215	147.0	13.6	8.3	21.0
	Year 2	25	20	210	144.7	13.8	8.4	21.3
	Year 3	23	17	199	149.1	11.4	6.6	18.3
	Year 4	17	9	199	160.8	5.6	2.6	10.6



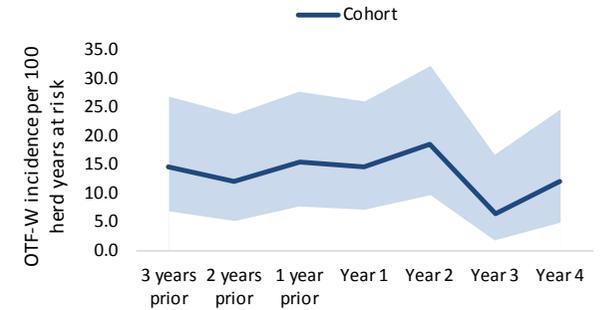
Area	Year	Herds under restriction			OTF-W prevalence	95% confidence interval	
		All	OTF-W	Herds		Lower	Upper
Cohort	3 years prior	27	24	202	11.9	7.8	17.2
	2 years prior	21	19	207	9.2	5.6	14.0
	1 year prior	17	16	214	7.5	4.3	11.9
	Year 1	17	14	203	6.9	3.8	11.3
	Year 2	14	12	177	6.8	3.6	11.5
	Year 3	18	16	173	9.2	5.4	14.6
	Year 4	16	12	170	7.1	3.7	12.0
HIE	3 years prior	28	25	225	11.1	7.3	16.0
	2 years prior	21	19	214	8.9	5.4	13.5
	1 year prior	17	16	215	7.4	4.3	11.8
	Year 1	17	14	211	6.6	3.7	10.9
	Year 2	15	13	199	6.5	3.5	10.9
	Year 3	19	17	199	8.5	5.1	13.3
	Year 4	17	13	202	6.4	3.5	10.8



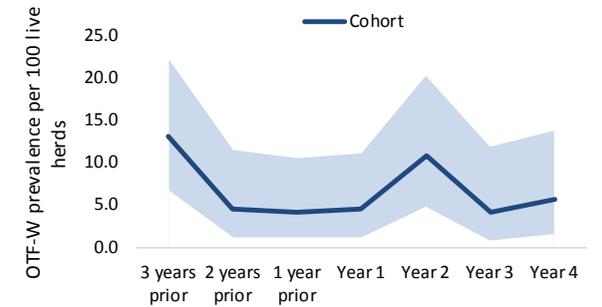
Area 01 - Gloucestershire buffer

Area name	% 2km buffer area available at start	% of original buffer area available			
		Year 1	Year 2	Year 3	Year 4
Area 01 - Gloucestershire	100%	100%	100%	100%	71%

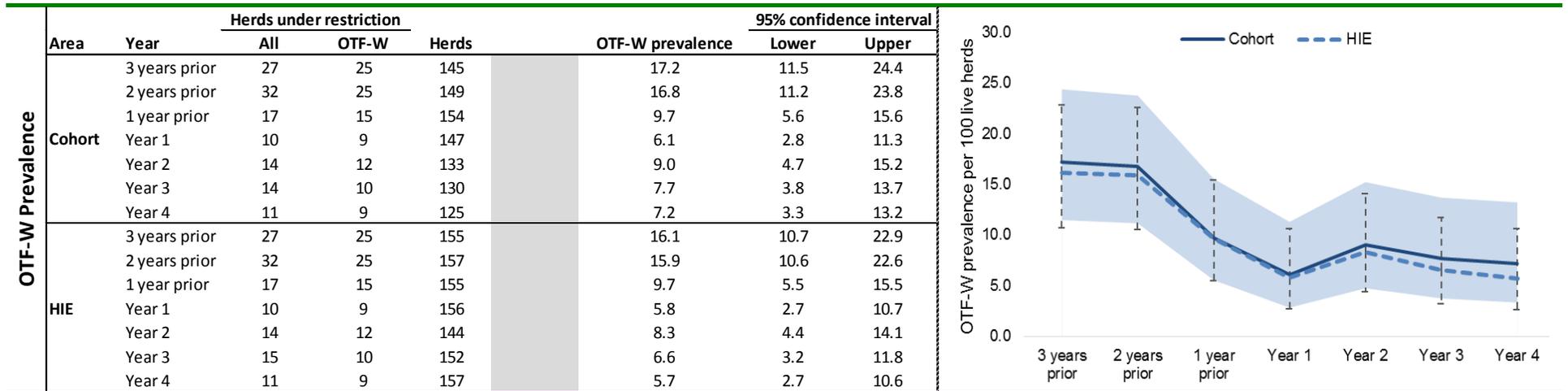
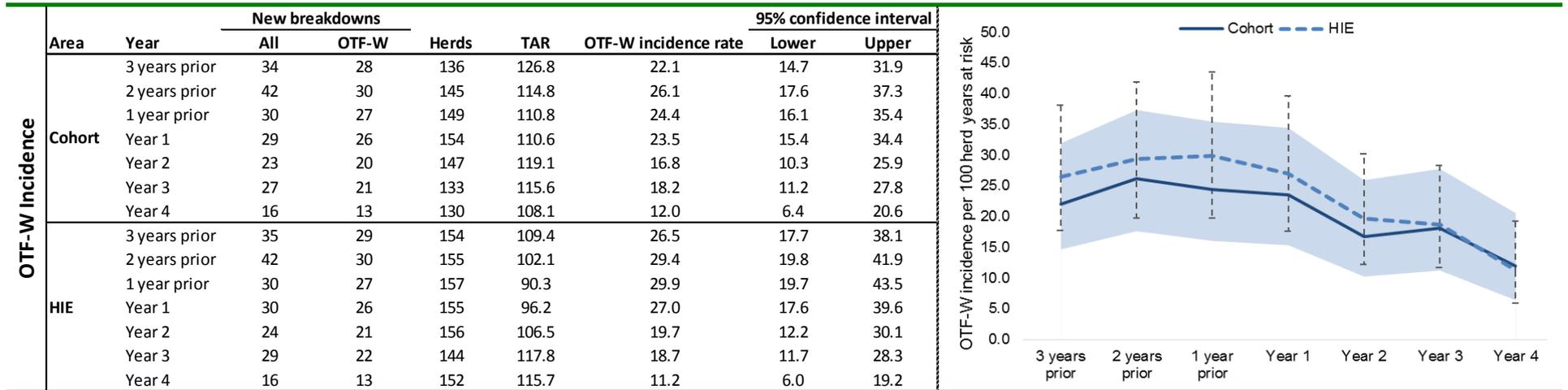
OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	13	10	82	68.4	14.6	7.0	26.9
		2 years prior	11	8	84	66.0	12.1	5.2	23.9
		1 year prior	17	11	86	71.0	15.5	7.7	27.7
		Year 1	15	11	94	75.8	14.5	7.2	26.0
		Year 2	17	12	89	64.8	18.5	9.6	32.4
		Year 3	9	4	74	61.3	6.5	1.8	16.7
		Year 4	13	7	71	58.4	12.0	4.8	24.7



OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	11	11	84	13.1	6.7	22.2
		2 years prior	5	4	86	4.7	1.3	11.5
		1 year prior	8	4	94	4.3	1.2	10.5
		Year 1	6	4	89	4.5	1.2	11.1
		Year 2	11	8	74	10.8	4.8	20.2
		Year 3	5	3	71	4.2	0.9	11.9
		Year 4	8	4	71	5.6	1.6	13.8



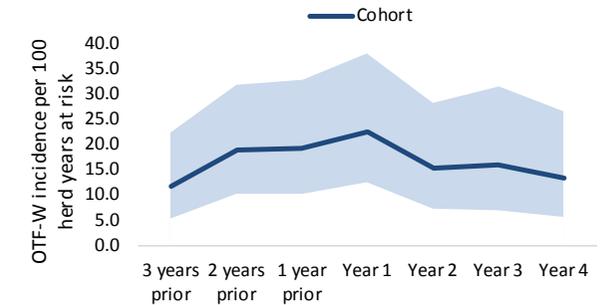
Area 02 – Somerset central



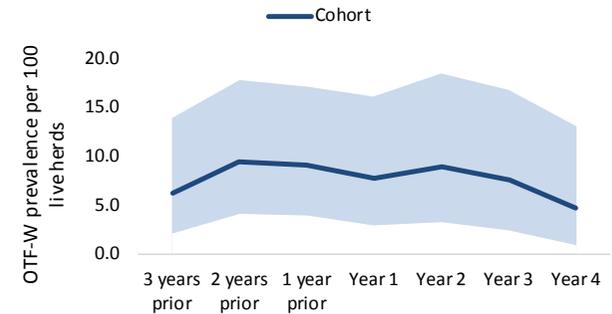
Area 02 – Somerset buffer

Area name	% 2km buffer area available at start	% of original buffer area available			
		Year 1	Year 2	Year 3	Year 4
Area 02 - Somerset	92%	100%	100%	100%	100%

OTF-W Incidence	Area	Year	New breakdowns			OTF-W incidence rate	95% confidence interval		
			All	OTF-W	Herds		Lower	Upper	
Cohort		3 years prior	12	9	75	75.8	11.9	5.4	22.5
		2 years prior	15	14	80	73.6	19.0	10.4	31.9
		1 year prior	16	13	84	67.8	19.2	10.2	32.8
		Year 1	15	14	88	61.7	22.7	12.4	38.1
		Year 2	12	10	77	65.2	15.3	7.4	28.2
		Year 3	11	8	67	50.0	16.0	6.9	31.5
		Year 4	12	8	66	59.2	13.5	5.8	26.6

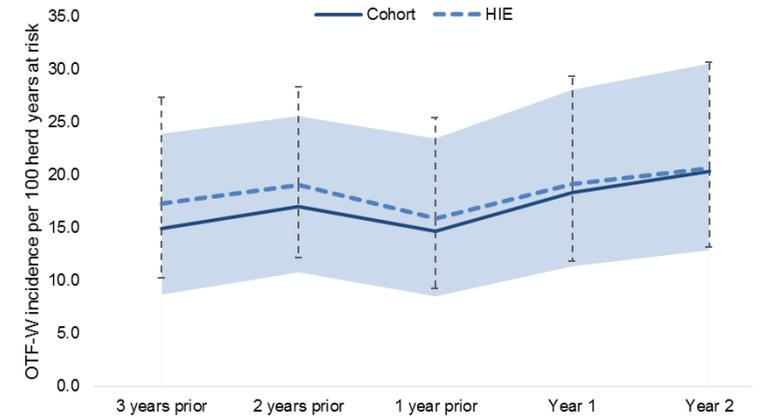


OTF-W Prevalence	Area	Year	Herds under restriction			OTF-W prevalence	95% confidence interval	
			All	OTF-W	Herds		Lower	Upper
Cohort		3 years prior	7	5	80	6.3	2.1	14.0
		2 years prior	9	8	84	9.5	4.2	17.9
		1 year prior	8	8	88	9.1	4.0	17.1
		Year 1	6	6	77	7.8	2.9	16.2
		Year 2	6	6	67	9.0	3.4	18.5
		Year 3	6	5	66	7.6	2.5	16.8
		Year 4	5	3	64	4.7	1.0	13.1



Area 03 – Dorset central

Area	Year	New breakdowns				OTF-W incidence rate	95% confidence interval	
		All	OTF-W	Herds	TAR		Lower	Upper
		OTF-W Incidence						
Cohort	3 years prior	25	17	143	113.9	14.9	8.7	23.9
	2 years prior	29	23	146	135.1	17.0	10.8	25.5
	1 year prior	26	17	149	116.2	14.6	8.5	23.4
	Year 1	35	21	157	114.4	18.4	11.4	28.1
	Year 2	33	23	151	113.1	20.3	12.9	30.5
HIE	3 years prior	26	18	180	104.1	17.3	10.2	27.3
	2 years prior	30	24	177	125.9	19.1	12.2	28.4
	1 year prior	26	17	165	107.0	15.9	9.3	25.4
	Year 1	35	21	157	109.6	19.2	11.9	29.3
	Year 2	36	24	158	116.5	20.6	13.2	30.7



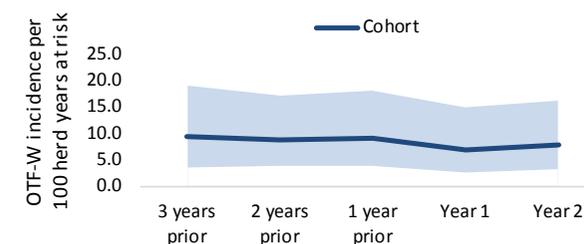
Area	Year	Herds under restriction			OTF-W prevalence	95% confidence interval	
		All	OTF-W	Herds		Lower	Upper
		OTF-W Prevalence					
Cohort	3 years prior	17	15	146	10.3	5.9	16.4
	2 years prior	18	17	149	11.4	6.8	17.6
	1 year prior	17	16	157	10.2	5.9	16.0
	Year 1	25	17	151	11.3	6.7	17.4
	Year 2	25	20	142	14.1	8.8	20.9
HIE	3 years prior	19	17	177	9.6	5.7	14.9
	2 years prior	19	18	165	10.9	6.6	16.7
	1 year prior	17	16	157	10.2	5.9	16.0
	Year 1	25	17	158	10.8	6.4	16.7
	Year 2	26	20	161	12.4	7.8	18.5



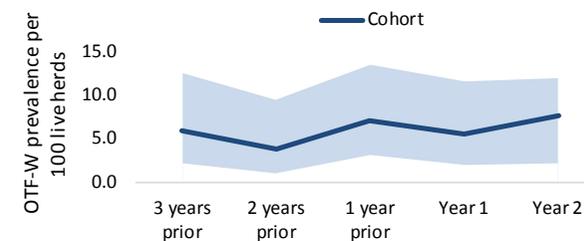
Area 03 – Dorset buffer

Area name	% 2km buffer area available at start	% of original buffer area available	
		Year 1	Year 2
Area 03 - Dorset	100%	100%	100%

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	11	7	96	75.4	9.3	3.7	19.1
		2 years prior	16	8	100	91.5	8.7	3.8	17.2
		1 year prior	10	8	103	86.5	9.3	4.0	18.2
		Year 1	17	6	113	87.5	6.9	2.5	14.9
		Year 2	19	7	110	89.0	7.9	3.2	16.2



OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	7	6	100	6.0	2.2	12.6
		2 years prior	8	4	103	3.9	1.0	9.4
		1 year prior	9	8	113	7.1	3.1	13.5
		Year 1	12	6	110	5.5	2.0	11.5
		Year 2	18	8	105	7.6	2.1	12.0



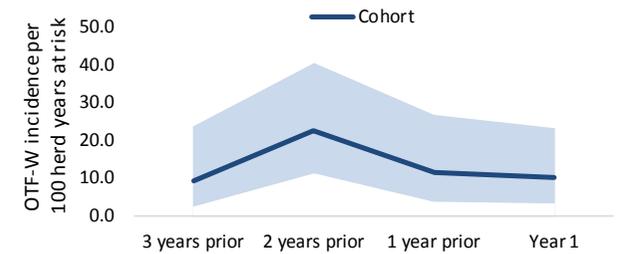
Area 04 – Cornwall central



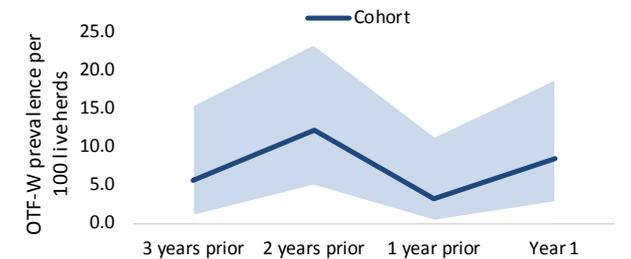
Area 04 – Cornwall buffer

Area name	% 2km buffer area available at start	% of original buffer area available
		Year 1
Area 04 - Cornwall	45%	100%

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	4	4	52	43.2	9.3	2.5	23.7
		2 years prior	12	11	54	48.3	22.8	11.4	40.8
		1 year prior	6	5	58	43.6	11.5	3.7	26.8
		Year 1	9	5	62	49.7	10.1	3.3	23.5

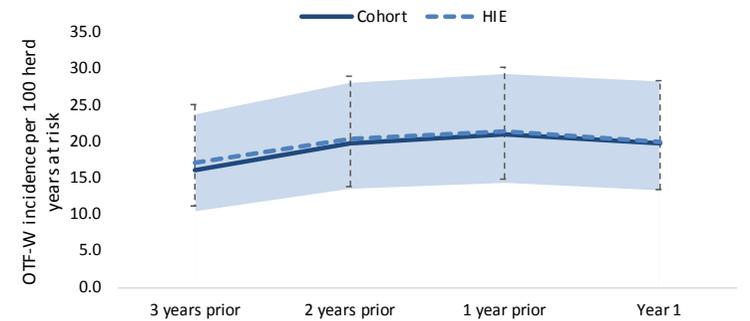


OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	4	3	54	5.6	1.2	15.4
		2 years prior	7	7	58	12.1	5.0	23.3
		1 year prior	3	2	62	3.2	0.4	11.2
		Year 1	9	5	59	8.5	2.8	18.7

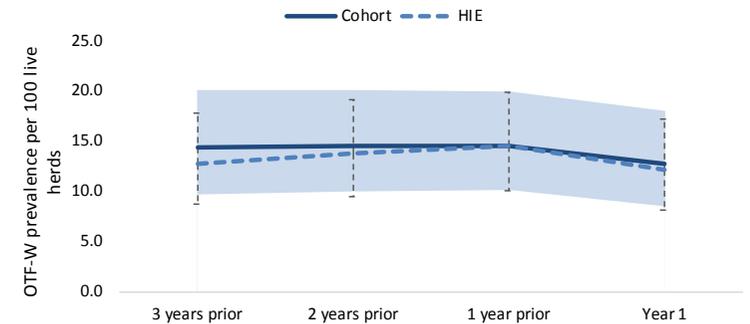


Area 05 – Cornwall central

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	31	25	193	154.9	16.1	10.4	23.8
		2 years prior	38	31	195	156.5	19.8	13.5	28.1
		1 year prior	39	33	207	157.7	20.9	14.4	29.4
		Year 1	38	30	213	151.0	19.9	13.4	28.4
HIE		3 years prior	33	26	234	151.7	17.1	11.2	25.1
		2 years prior	38	31	228	152.0	20.4	13.9	28.9
		1 year prior	39	33	217	153.5	21.5	14.8	30.2
		Year 1	38	30	214	150.6	19.9	13.4	28.4



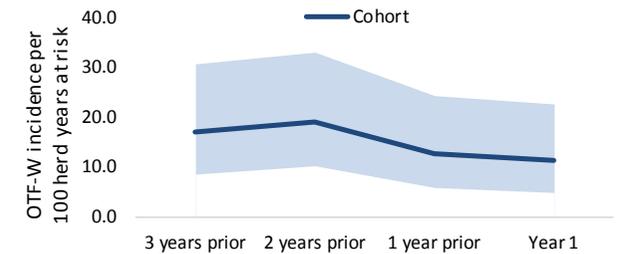
OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	30	28	195	14.4	9.8	20.1
		2 years prior	31	30	207	14.5	10.0	20.0
		1 year prior	34	31	213	14.6	10.1	20.0
		Year 1	29	26	205	12.7	8.5	18.0
HIE		3 years prior	31	29	228	12.7	8.7	17.8
		2 years prior	31	30	217	13.8	9.5	19.1
		1 year prior	34	31	214	14.5	10.1	19.9
		Year 1	29	26	215	12.1	8.1	17.2



Area 05 – Cornwall buffer

Area name	% 2km buffer area available at start	% of original buffer area available
		Year 1
Area 05 - Cornwall	58%	100%

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	13	11	76	63.9	17.2	8.6	30.8
		2 years prior	16	13	81	67.4	19.3	10.3	33.0
		1 year prior	14	9	88	69.7	12.9	5.9	24.5
		Year 1	11	8	91	69.6	11.5	5.0	22.6

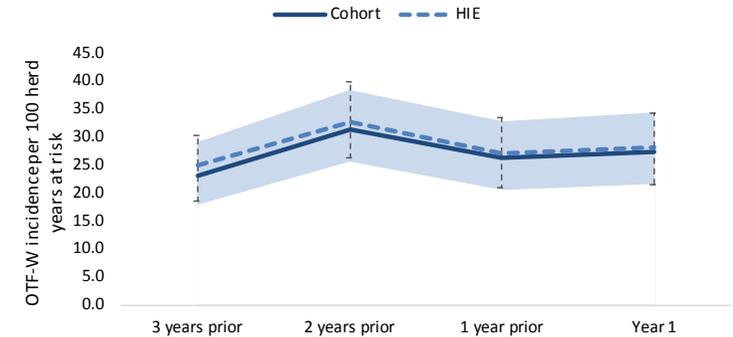


OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	7	7	81	8.6	3.5	17.0
		2 years prior	9	7	88	8.0	3.3	15.7
		1 year prior	12	9	91	9.9	4.6	17.9
		Year 1	7	6	86	7.0	2.6	14.6

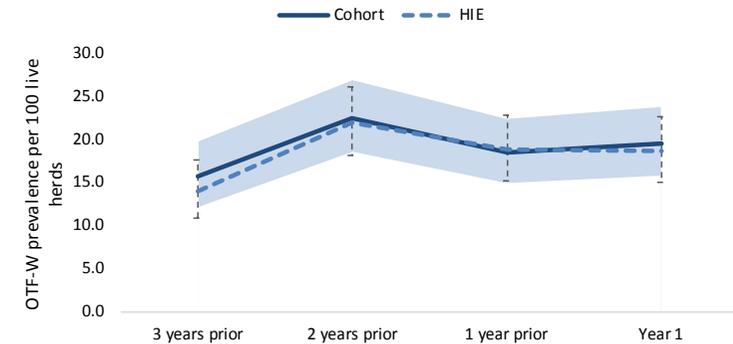


Area 06 – Devon central

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
OTF-W Incidence	Cohort	3 years prior	78	70	378	303.9	23.0	18.0	29.1
		2 years prior	111	96	388	305.4	31.4	25.5	38.4
		1 year prior	87	75	409	286.2	26.2	20.6	32.9
		Year 1	82	75	429	274.3	27.3	21.5	34.3
	HIE	3 years prior	82	73	452	293.0	24.9	18.6	30.2
		2 years prior	111	96	444	295.1	32.5	26.3	39.7
		1 year prior	88	76	424	281.3	27.0	21.0	33.4
		Year 1	84	77	430	274.8	28.0	21.5	34.2



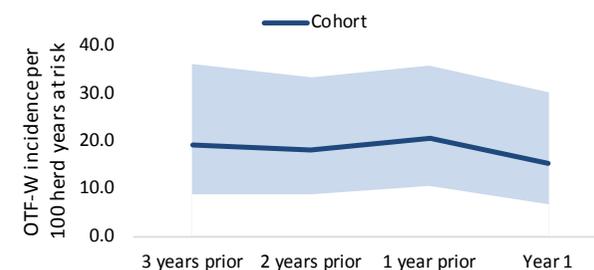
OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
OTF-W Prevalence	Cohort	3 years prior	63	61	388	15.7	12.2	19.7
		2 years prior	97	92	409	22.5	18.5	26.9
		1 year prior	84	79	429	18.4	14.9	22.4
		Year 1	82	78	400	19.5	15.7	23.7
	HIE	3 years prior	64	62	444	14.0	10.9	17.5
		2 years prior	98	93	424	21.9	18.1	26.2
		1 year prior	86	81	430	18.8	15.3	22.9
		Year 1	84	80	430	18.6	15.0	22.6



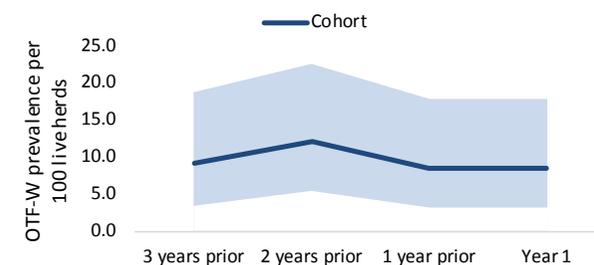
Area 06 – Devon buffer

Area name	% 2km buffer area available at start	% of original buffer area available
		Year 1
Area 06 - Devon	52%	100%

OTF-W Incidence	Area	Year	New breakdowns				OTF-W incidence rate	95% confidence interval	
			All	OTF-W	Herds	TAR		Lower	Upper
Cohort		3 years prior	9	9	64	47.3	19.0	8.7	36.1
		2 years prior	12	10	66	55.3	18.1	8.7	33.3
		1 year prior	14	12	66	58.6	20.5	10.6	35.7
		Year 1	8	8	70	52.1	15.3	6.6	30.2

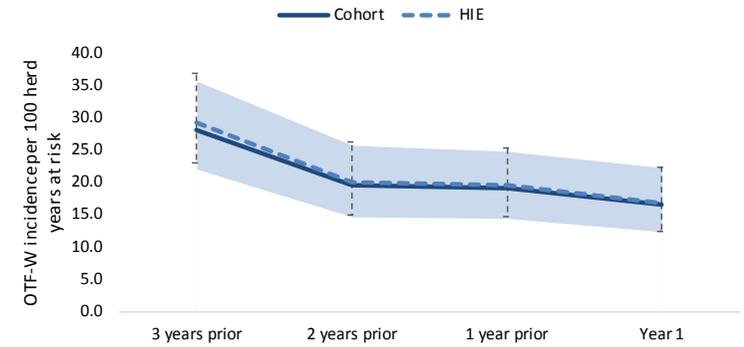


OTF-W Prevalence	Area	Year	Herds under restriction			OTF-W prevalence	95% confidence interval	
			All	OTF-W	Herds		Lower	Upper
Cohort		3 years prior	6	6	66	9.1	3.4	18.7
		2 years prior	10	8	66	12.1	5.4	22.5
		1 year prior	7	6	70	8.6	3.2	17.7
		Year 1	6	6	70	8.6	3.2	17.7

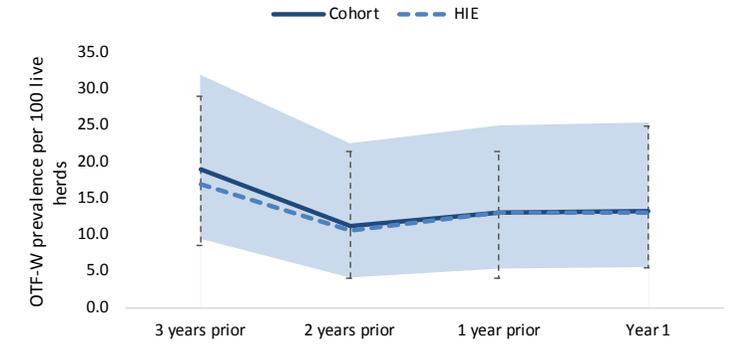


Area 07 – Devon central

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	88	71	334	251.5	28.2	22.0	35.6
		2 years prior	69	52	341	265.6	19.6	14.6	25.7
		1 year prior	78	55	362	288.0	19.1	14.4	24.9
		Year 1	70	46	372	276.6	16.6	12.2	22.2
HIE		3 years prior	89	72	406	245.2	29.4	23.0	37.0
		2 years prior	69	52	389	259.7	20.0	15.0	26.3
		1 year prior	78	55	374	281.6	19.5	14.7	25.4
		Year 1	70	46	372	273.6	16.8	12.3	22.4



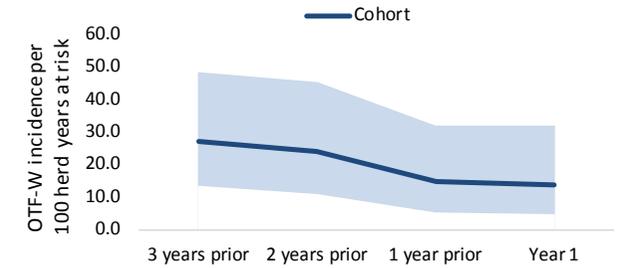
OTF-W Prevalence	Area	Year	Herds under restriction			OTF-W prevalence	95% confidence interval	
			All	OTF-W	Herds		Lower	Upper
Cohort		3 years prior	51	46	341	13.5	10.0	17.6
		2 years prior	48	41	362	11.3	8.3	15.1
		1 year prior	58	46	372	12.4	9.2	16.1
		Year 1	55	39	359	10.9	7.8	14.6
HIE		3 years prior	52	47	389	12.1	9.0	15.7
		2 years prior	48	41	374	11.0	8.0	14.6
		1 year prior	58	46	372	12.4	9.2	16.1
		Year 1	55	39	379	10.3	7.4	13.8



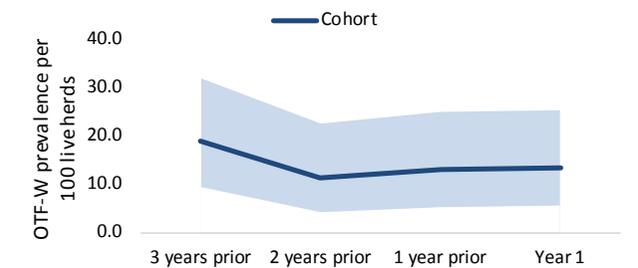
Area 07 – Devon buffer

Area name	% 2km buffer area available at start	% of original buffer area available
		Year 1
Area 07 - Devon	46%	100%

OTF-W Incidence	Area	Year	New breakdowns				OTF-W incidence rate	95% confidence interval	
			All	OTF-W	Herds	TAR		Lower	Upper
Cohort		3 years prior	14	11	52	40.7	27.0	13.5	48.4
		2 years prior	10	9	53	37.9	23.8	10.9	45.1
		1 year prior	13	6	54	41.1	14.6	5.4	31.8
		Year 1	13	5	54	36.8	13.6	4.4	31.7

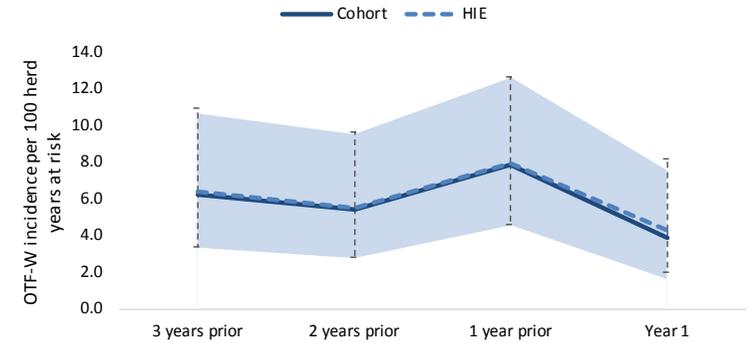


OTF-W Prevalence	Area	Year	Herds under restriction			OTF-W prevalence	95% confidence interval	
			All	OTF-W	Herds		Lower	Upper
Cohort		3 years prior	11	10	53	18.9	9.4	32.0
		2 years prior	6	6	54	11.1	4.2	22.6
		1 year prior	12	7	54	13.0	5.4	24.9
		Year 1	12	7	53	13.2	5.5	25.3

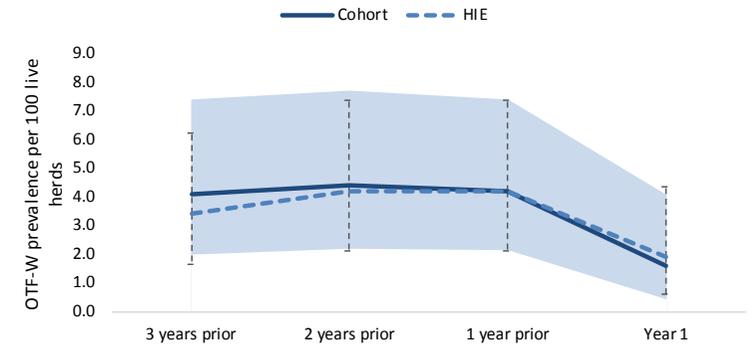


Area 08 – Dorset central

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	30	13	236	207.5	6.3	3.3	10.7
		2 years prior	23	12	244	220.6	5.4	2.8	9.5
		1 year prior	31	17	251	216.1	7.9	4.6	12.6
		Year 1	26	8	261	207.6	3.9	1.7	7.6
HIE		3 years prior	30	13	304	203.4	6.4	3.4	10.9
		2 years prior	23	12	291	217.5	5.5	2.9	9.6
		1 year prior	31	17	262	214.2	7.9	4.6	12.7
		Year 1	27	9	263	208.4	4.3	2.0	8.2



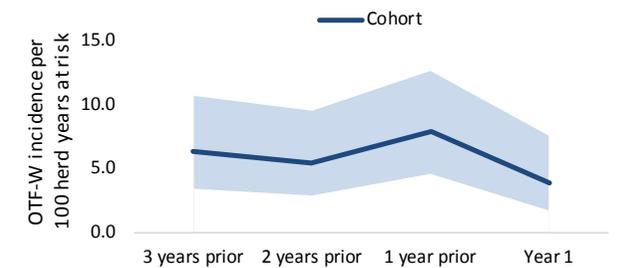
OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	16	10	244	4.1	2.0	7.4
		2 years prior	14	11	251	4.4	2.2	7.7
		1 year prior	21	11	261	4.2	2.1	7.4
		Year 1	14	4	249	1.6	0.4	4.1
HIE		3 years prior	16	10	291	3.4	1.7	6.2
		2 years prior	14	11	262	4.2	2.1	7.4
		1 year prior	21	11	263	4.2	2.1	7.4
		Year 1	15	5	266	1.9	0.6	4.3



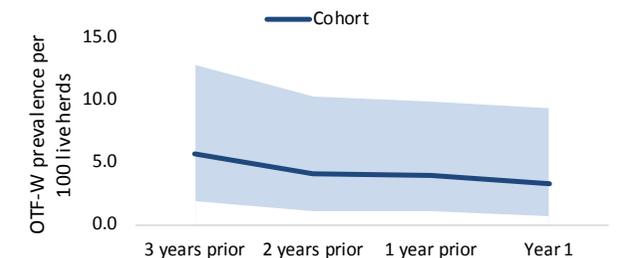
Area 08 – Dorset buffer

Area name	% 2km buffer area available at start	% of original buffer area available
		Year 1
Area 08 - Dorset	82%	100%

OTF-W Incidence	Area	Year	New breakdowns				95% confidence interval		
			All	OTF-W	Herds	TAR	OTF-W incidence rate	Lower	Upper
Cohort		3 years prior	12	7	83	70.4	9.9	4.0	20.5
		2 years prior	11	7	88	75.5	9.3	3.7	19.1
		1 year prior	9	4	97	74.3	5.4	1.5	13.8
		Year 1	7	2	100	73.7	2.7	0.3	9.8

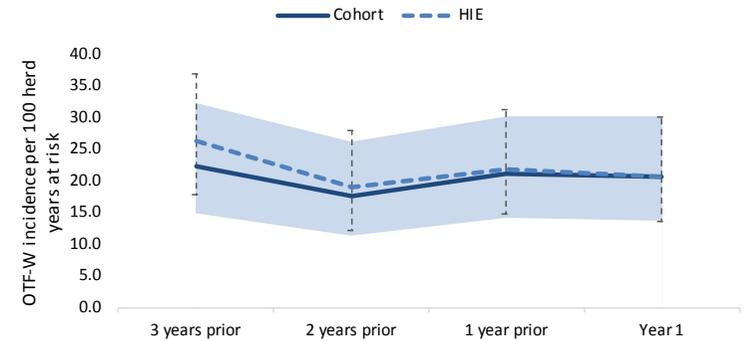


OTF-W Prevalence	Area	Year	Herds under restriction			OTF-W prevalence	95% confidence interval	
			All	OTF-W	Herds		Lower	Upper
Cohort		3 years prior	5	5	88	5.7	1.9	12.8
		2 years prior	6	4	97	4.1	1.1	10.2
		1 year prior	5	4	100	4.0	1.1	9.9
		Year 1	5	3	91	3.3	0.7	9.3

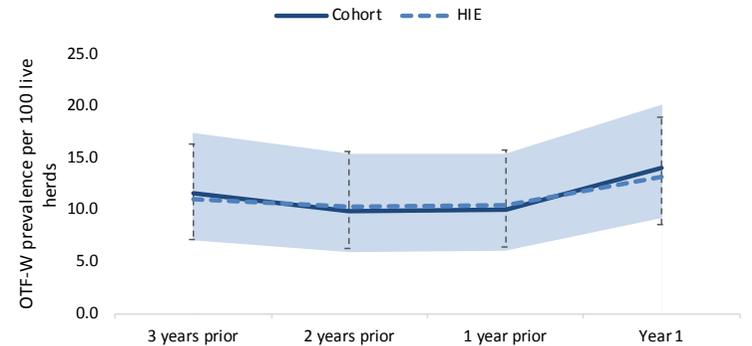


Area 09 – Gloucestershire central

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	35	28	159	125.7	22.3	14.8	32.2
		2 years prior	34	24	165	136.7	17.6	11.2	26.1
		1 year prior	43	29	172	137.8	21.0	14.1	30.2
		Year 1	36	27	180	130.3	20.7	13.7	30.1
HIE		3 years prior	39	32	197	122.3	26.2	17.9	36.9
		2 years prior	34	25	199	132.4	18.9	12.2	27.9
		1 year prior	44	30	185	136.9	21.9	14.8	31.3
		Year 1	35	27	182	130.7	20.7	13.6	30.1



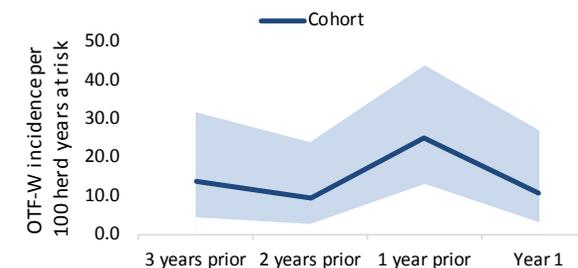
OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	22	19	165	11.5	7.1	17.4
		2 years prior	21	17	172	9.9	5.9	15.4
		1 year prior	23	18	180	10.0	6.0	15.3
		Year 1	28	24	171	14.0	9.2	20.2
HIE		3 years prior	25	22	199	11.1	7.1	16.3
		2 years prior	23	19	185	10.3	6.3	15.6
		1 year prior	24	19	182	10.4	6.4	15.8
		Year 1	27	24	183	13.1	8.6	18.9



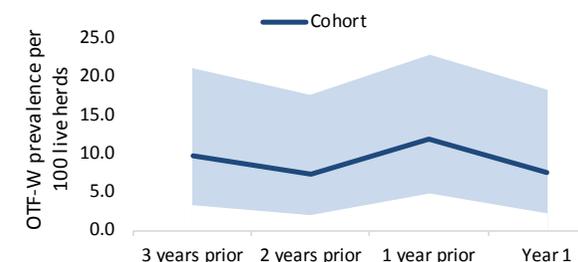
Area 09 – Gloucestershire buffer

Area name	% 2km buffer area available at start	% of original buffer area available
		Year 1
Area 09 - Gloucestershire	92%	100%

OTF-W Incidence	Area	Year	New breakdowns				OTF-W incidence rate	95% confidence interval	
			All	OTF-W	Herds	TAR		Lower	Upper
Cohort		3 years prior	7	5	49	36.9	13.5	4.4	31.6
		2 years prior	5	4	52	43.1	9.3	2.5	23.7
		1 year prior	12	12	55	47.8	25.1	13.0	43.8
		Year 1	5	4	59	38.0	10.5	2.9	27.0

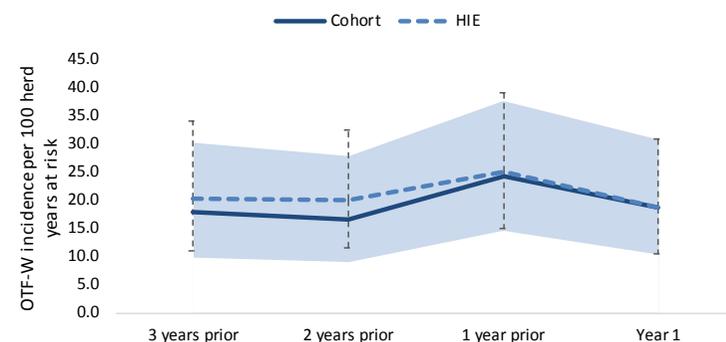


OTF-W Prevalence	Area	Year	Herds under restriction			OTF-W prevalence	95% confidence interval	
			All	OTF-W	Herds		Lower	Upper
Cohort		3 years prior	5	5	52	9.6	3.2	21.0
		2 years prior	5	4	55	7.3	2.0	17.6
		1 year prior	7	7	59	11.9	4.9	22.9
		Year 1	4	4	53	7.5	2.1	18.2

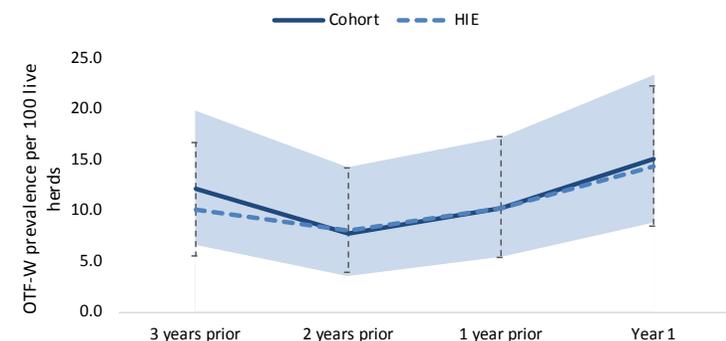


Area 10 – Herefordshire central

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	20	14	103	78.0	18.0	9.8	30.1
		2 years prior	20	14	107	84.6	16.6	9.1	27.8
		1 year prior	23	19	116	78.7	24.1	14.5	37.7
		Year 1	18	15	117	80.2	18.7	10.5	30.8
HIE		3 years prior	20	14	130	69.0	20.3	11.1	34.0
		2 years prior	22	16	128	79.8	20.0	11.5	32.6
		1 year prior	23	19	125	75.7	25.1	15.1	39.2
		Year 1	19	15	117	80.2	18.7	10.5	30.8



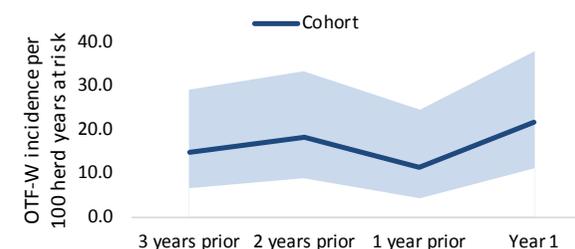
OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	16	13	107	12.1	6.6	19.9
		2 years prior	11	9	116	7.8	3.6	14.2
		1 year prior	13	12	117	10.3	5.4	17.2
		Year 1	17	16	106	15.1	8.9	23.4
HIE		3 years prior	16	13	128	10.2	5.5	16.7
		2 years prior	12	10	125	8.0	3.9	14.2
		1 year prior	13	12	117	10.3	5.4	17.2
		Year 1	17	16	111	14.4	8.5	22.4



Area 10 – Herefordshire buffer

Area name	% 2km buffer area available at start	% of original buffer area available
		Year 1
Area 10 - Herefordshire	82%	100%

OTF-W Incidence	Area	Year	New breakdowns		Herds	TAR	OTF-W incidence rate	95% confidence interval	
			All	OTF-W				Lower	Upper
Cohort		3 years prior	12	8	61	54.4	14.7	6.3	29.0
		2 years prior	12	10	64	55.1	18.1	8.7	33.4
		1 year prior	10	6	71	53.1	11.3	4.1	24.6
		Year 1	13	12	77	55.1	21.8	11.3	38.1



OTF-W Prevalence	Area	Year	Herds under restriction		Herds	OTF-W prevalence	95% confidence interval	
			All	OTF-W			Lower	Upper
Cohort		3 years prior	9	6	64	9.4	3.5	19.3
		2 years prior	9	7	71	9.9	4.1	19.3
		1 year prior	6	5	77	6.5	2.1	14.5
		Year 1	12	11	68	16.2	8.4	27.1

