

## **REGULATORY APPRAISAL**

### **ANIMALS, WALES**

#### **THE TUBERCULOSIS (WALES) ORDER 2006**

##### **Background**

1. Bovine Tuberculosis (TB) is a serious infectious and zoonotic disease that affects a small proportion of the national herd (approximately 4 percent). The prevalence of TB in cattle has been increasing at an average annual rate of 18 percent since 1988. The causes of the long-term increase in TB are not well understood.
2. The purpose of testing cattle for bovine TB prior to movement is to identify and prevent diseased animals from moving, thereby reducing the risk of the geographic spread of disease, particularly to parts of GB that are currently free of TB. As there are benefits to the herd owner of buying or selling cattle with some degree of disease assurance, it is intended that they should bear the costs of tests that are outside the routine herd test, though Government will provide the necessary tuberculin.
3. Routine surveillance testing is currently carried out at intervals of one to four years, depending upon historic disease incidence – the taxpayer funds this regime. It is thought that more frequent testing of cattle in lower risk parishes will reduce occurrences of the most costly incidents where the disease is allowed to spread unchecked for long periods. The additional costs of extending the routine surveillance framework would be borne by the taxpayer.

##### **Purpose and intended effect of the measure**

4. This Order, which applies in Wales only, revokes and re-enacts the Tuberculosis (Wales) Order 1984 with alterations. It also introduces an obligation to test certain animals before movement. The Regulations will make it a statutory requirement for farmers to TB test cattle over 15 months old from 1 and 2 yearly testing parishes, with some exemptions, before they are moved off farm. Cattle are already routinely tested according to disease status of the area where the farm is located, referred to as a parish.

##### **Risk Assessment**

5. Should the legislation not be implemented there would be a number of risks, including:
  - There would be different testing regimes in operation in Wales, England and Scotland; this would cause many practical difficulties for the State Veterinary Service in managing and administering these regimes.
  - Welsh farmers would have difficulty in selling their stock to English and Scottish farmers without previously having their animals pre-movement tested.

- There would be a risk of disease spread within Wales, from hotspot areas to clean areas.

## 6. Options

### Option 0: Do Nothing

This is a baseline solution with no additional requirements for pre-movement testing or more frequent routine surveillance testing.

### Option 1: Pre-movement testing;

Pre-movement testing for all cattle moving from one and two yearly testing herds to any other herd.

### Option 2: Pre-movement testing with exemptions;

Pre-movement testing for all cattle moving from one and two yearly testing herds to any other herd, with exemptions for all cattle under 15 months of age. – **this is the recommended option (make the legislation).**

### Option 3: Pre-movement testing in conjunction with increased routine surveillance testing;

Pre-movement testing for all cattle moving from one and two yearly testing herds to any other herd, in conjunction with increased routine surveillance testing. Essentially option 1, with the abolition of three and four yearly tested parishes, such that all cattle in Wales are tested at a minimum of every two years.

### Option 4: Pre-movement testing with exemptions in conjunction with increased routine surveillance testing;

Pre-movement testing for all cattle moving from one and two yearly testing herds to any other herd, with exemptions for all cattle under 15 months of age, in conjunction with increased routine surveillance testing. Essentially option 2, with the abolition of three and four yearly tested parishes, such that all cattle in Wales are tested at a minimum of every two years.

## 7. Costs of preferred option 2 - Pre-movement testing with exemptions

C1	Costs of carrying out additional tests
C2	Opportunity cost of movements rearranged/foregone due to test avoidance
C3	False positive or false inconclusive test results
C4	Enforcement costs
C5	Publicity and administration costs
C6	Change of welfare in secondary markets
C7	Disease consequences of higher stocking densities
C8	Requirement for additional veterinary practitioner capacity

C1 – The average cost per test is likely to be almost £9. This figure covers all aspects of the test and allows for variations in the average size of the batch of animals presented for testing.

C2 –The immediate response of cattle owners to the burden of additional testing costs has been factored into calculations via proportions of test avoidance, with associated costs (provided by Defra).

C3 – Under the TB skin test, *false positive* test results occur between 1 and 5 times in every 1000 tests. *False inconclusive* results occur slightly less often. The analysis presents a conservative value at the lower end of this range. Estimated incident costs are approximately £5,000 and £2,800 per case, respectively.

C4 – LACORS<sup>1</sup> estimate that the enforcement costs for TB pre-movement testing are approximately £6,700 per annum for Wales only (pro-rated from a GB figure). This assumes that legislation requires evidence of the TB testing status to remain on the farm of origin. This estimate is consistent with a proposed 'light touch' approach.

C5 – Additional costs for publicity and administration by SVS are estimated here at £30,000 per year.

C6 – Modified cattle movement patterns, discussed in C2, will have an impact upon the markets of substitute and complementary goods. The welfare impact in secondary markets, such as reduced revenue of livestock auctioneers, should be acknowledged at this stage. The complicated dynamics of these changes mean that a quantification of the change was not feasible.

C7 - Modified animal movements may lead to higher stocking densities, which could have detrimental disease consequences. It was not possible to quantify this impact, but it should be acknowledged at this stage.

C8 – Some concerns exist regarding veterinary practitioner capacity in light of a more rigorous testing framework. There may be costs associated with the provision of extra veterinary capacity. This is an uncertain cost and has yet to be quantified.

- **Cattle movements;** The number of cattle movements to which testing will apply have been estimated on the basis of the most recent data available; actual 2002/2003 movements.
- **Prevalence rates;** The prevalence of TB in individual animals over 15 months old is estimated to be 0.26 percent (1 in every 400), as derived from historic TB reactor rates in cattle moving from one and two yearly tested farms to all other holdings. This figure implies that the prevalence in animals over 15 months is about 1.5 times the average of all animals moved. It is possible that this understates the risk of TB spread caused by the exemption; the current low number of young reactors identified in the national herd may be partly due to the lower likelihood that these cattle will be tested in routine herd tests. Therefore, some uncertainty remains.

---

<sup>1</sup> Local Authorities Co-ordinators of Regulatory Services.

- **Skin test sensitivity;** This is thought to be around 80 percent, and is implicit within historical TB reactor rates.

#### Total Costs

Cost	Value	Industry Burden	Taxpayer Burden
C1	554	-	-
C2	224	-	-
C3	206	-	-
C4	7	-	-
C5	30	-	-
<b>Total</b>	<b>1,020</b>	<b>761</b>	<b>259</b>

\*All figures in £ 000's

### 8. Benefits of recommended option 2

B1	Costs avoided by preventing new TB incidents in herds to which diseased animals would no longer move <sup>2</sup>
B2	Reduced requirement for herd testing as incidence falls

B1 – Three main elements form the basis for calculating the number of new incidents avoided.

- **Cattle movements;** The number of cattle movements to which testing will apply have been estimated on the basis of the most recent data available; actual 2002/2003 movements.
- **Prevalence rates;** The TB prevalence rates are derived from historic TB reactor rates (adjusted for FMD distortions) for all bovine movements from one and two yearly tested farms to all other holdings – estimated to be about 1 in every 600, or 0.17 percent.
- **Skin test sensitivity;** This is thought to be around 80 percent, and is implicit within historical TB reactor rates.

B2 - This is a dynamic effect, which would be difficult to quantify, but should be acknowledged at this stage.

Based on the above, the expected number of batches of animals containing at least one TB case now prevented by the proposed measure would be<sup>2</sup>;

- About 50 in three and four yearly testing herds
- About 80 in one and two yearly testing herds

To put this into context, the proposed measure applied in Wales would avoid about 130 new incidents each year, compared to a total of about 3,300 new herd incidents occurring in GB in 2004.

<sup>2</sup> The estimate of the prevalence rate is critical to the evaluation of PRMT and considerable effort has been made to obtain the best available information. Nevertheless, some uncertainty remains, which is tackled further in section 5, Sensitivity Analysis.

Direct costs of a new TB incident, such as the lost value of animals slaughtered, the costs of organising compensation, less salvage value, additional testing cost and losses due to movement restrictions were valued at approximately £7,500. This figure applies to new incidents in one and two yearly testing parishes. The inclusion of indirect costs, such as additional testing and outbreak 'hotspots' on neighbouring holdings takes the total cost per incident up to £24,000 for three and four yearly testing parishes. Applying these average cost savings to the expected number of new incidents avoided gives an estimate of the total benefit.

#### Total Benefits

Benefit	Total	Industry Benefit	Taxpayer Benefit
	1,766	644	1,122

\*All figures in £ 000's

#### Net Benefits

Total Benefit	Total Cost	Net Benefit
1,766	1,020	746

\*All figures in £ 000's

The net benefit of the proposed measure is estimated to be £0.7M per year, with a benefit-cost ratio of 1.7:1. Assuming that net benefits accrue in perpetuity, the NPV<sup>1</sup> of this option is £21.3 million.

The costs for a typical farm business of the measure are likely to be relatively small. Various steps to modify cattle movements and TB testing will counter the extra costs of handling cattle and movement restrictions. Defra estimate that extra costs would add no more than one percent to total farm costs, even for livestock holdings in Less Favourable Areas.

Under the current compensation and routine testing regime the main costs of TB management are borne by the taxpayer. This measure will help to contain the future cost of Government-funded regimes by partially shifting the responsibility of cost back to the farmer. This creates incentives for farmers to reduce or adapt high-risk movements. Initially, a high proportion of additional costs fall upon the sellers of potentially TB-carrying cattle. The benefits of reduced disease spread affect buying farms and their neighbours. If market prices of cattle increase to reflect the greater freedom from TB, then both buyers and sellers will share the cost of the proposal.

### Sensitivity Analysis

- 9 There is a high degree of uncertainty associated with a number of the assumptions used in the analysis. Sensitivity analysis was undertaken to test the impact of changing these assumptions. The above results were shown to be robust in all but the most extreme (pessimistic) of circumstances.

<sup>1</sup> Using Treasury Test Discount Rate of 3.5%

## **Consultation with small businesses: the Small Firms' Impact Test**

10. As the businesses most affected by the introduction of pre-movement testing measures are farms they are likely by their nature be small - primarily those farmers who raise and trade cattle. The relevant industry organisations and key stakeholders in Wales have been consulted throughout the process of developing this policy.

### **Consultation**

#### **With Stakeholders**

11. A 16 week consultation entitled 'Preparing for a GB Strategy on Bovine Tuberculosis', which took place between 9 February 2004 and June 2004 sought the views of stakeholders on the principles on which a new 10 year strategy should be based to achieve a sustainable control policy for GB and detailed proposals for measures to be implemented in the short term. A list of consultees is attached at Annex A.

12. One of these principles was to reduce the risk of spreading TB from high to low incidence areas by requiring pre-movement testing of all cattle moving from one and two yearly testing herds to other herds. Almost all consultees who responded to this section of the consultation were in favour of the proposal. It was, however, believed that Government should fund pre-movement testing for the duration of the 10 year strategy. Those respondents not supporting the proposal pointed to the practical difficulties in introducing pre-movement testing; that these would outweigh the benefits, and to concerns about the reliability of the current skin test. Concerns were also raised about the additional workload that this proposal would place on farmers and the possible expense to farmers who may be struggling to run a viable business. A summary of consultation responses is attached at Annex B.

#### **With Subject Committee**

13. This Order was notified to the Environment, Planning and Countryside Committee, via the list of forthcoming legislation on July 16, 2003 - EPC(2)-03-03(p.3) - item number 49. It has been identified for detailed scrutiny at the committee meeting to be held on 19 January 2006.

#### **Enforcement and sanctions, monitoring and review.**

14. The regime will be enforced by officials of the SVS and local authorities, farmers receiving cattle but found not to have proper documentation proving that testing has taken place will be placed under sanction. Phase 2 of the Pre-movement testing regime will come into force in early 2007 and the success of the scheme will be reviewed to that date.

## Summary and recommendation

15. On the basis of the following analysis we would recommend proceeding with the **implementation of option 2**, with future review.

Option	Annual value £ 000			Benefit: cost ratio	£million
	Total cost	Total benefit	Net benefit		NPV
<b>Option 0:</b> Continue with current testing regime	Baseline				
<b>Option 1:</b> Pre-movement testing	1,741	2,806	1,065	1.6:1	30.4
<b>Option 2:</b> Pre-movement testing over 15 months	1,020	1,766	746	1.7:1	21.3
<b>Option 3:</b> Pre-movement testing with increased routine surveillance	4,764	3,100	-1,664	0.7:1	-47.5
<b>Option 4:</b> Pre-movement testing over 15 months with increased routine surveillance	3,592	2,720	-872	0.8:1	-24.9

16. Options 3 and 4 offer negative returns, and consequently, benefit-to-cost ratios of less than unity. The reason for this is that the constituent parts of these measures, PRMT and increased routine surveillance testing, are inefficient when implemented simultaneously;

- Increased routine surveillance testing abolishes low-risk parishes. Consequentially, all animals would now be subject to PRMT. This raises the costs of the measure substantially, whilst providing little incremental benefit in terms of new incidents prevented.
- Furthermore, increased routine surveillance testing undermines the high-value savings made by PRMT in low-risk parishes, since these are abolished under options 3 and 4.
- Option 4 performs slightly better than option 3 because the extent of benefit overlap is reduced. Increased routine surveillance captures incidents in cattle under 15 months, which are exempt from PRMT.

Essentially, options 3 and 4 achieve only one set of benefits, but incur two sets of costs.

17. Option 1 displays the largest net present value, but the NPV of option 2 is also large and positive. Option 2 carries a slightly superior benefit-cost ratio compared to option 1, making a distinction between the options difficult. However, in light of concerns regarding veterinary practitioner capacity, most strongly associated with option 1, we recommend the implementation of option 2.