



Northern Ireland
Assembly

**Committee for Agriculture and Rural
Development**

**OFFICIAL REPORT
(Hansard)**

Bovine TB Review: Departmental Briefing

1 May 2012

NORTHERN IRELAND ASSEMBLY

Committee for Agriculture and Rural Development

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Members present for all or part of the proceedings:

Mr Paul Frew (Chairperson)
Ms Michaela Boyle
Mr Trevor Clarke
Mrs Jo-Anne Dobson
Mr William Irwin
Mr Kieran McCarthy
Mr Oliver McMullan
Mr Robin Swann

Witnesses:

Mr Colin Hart	Department of Agriculture and Rural Development
Mr Roly Harwood	Department of Agriculture and Rural Development
Mr Ian McKee	Department of Agriculture and Rural Development
Mrs Colette McMaster	Department of Agriculture and Rural Development

The Chairperson: You are very welcome to the Committee to give evidence to the review of what we think is a very serious subject. I am sure that you have a presentation to give, so proceed without further ado, and Committee members will ask questions afterwards.

Mrs Colette McMaster (Department of Agriculture and Rural Development): Thank you, Mr Chairman, for giving the Department of Agriculture and Rural Development (DARD) the opportunity to provide a written submission and to make a presentation today. We welcome the Committee's decision to undertake a thematic review of bovine tuberculosis (bTB) in Northern Ireland. It is an important matter, and we wish to assist the Committee's consideration in any way that we can.

You will have received copies of our written submission and associated annexes. They provide a summary of the tuberculosis (TB) eradication programme in Northern Ireland and the progress made on implementing the recommendations of the Public Accounts Committee (PAC) from 2009. With me today are Colin Hart, deputy chief veterinary officer; Roly Harwood, senior principal veterinary officer; and Ian McKee, policy lead for TB. Our presentation will come in two halves. First, I will cover TB policy, and then Colin Hart will cover TB programme delivery.

DARD is committed to the eradication of TB in cattle, and we are continuing to work towards that end. So, why have we not set a target date for its eradication? The straightforward answer is that we would set a target date if we were certain that there was a set of actions that we could take that would

guarantee the eradication of TB in a definite timeline. However, it is not that simple. All the steps needed to get us to eradication and the tools that we would need to use are not yet known. We have a robust TB programme in place, and we have made good progress in dealing with the disease over the past decade. However, the fact remains that we still do not have all the answers. In our programme, we continue to make the best use of all the tools that we do have, to drive for more answers by investing in TB and wildlife research and studies, and to draw on new evidence as it emerges.

What sort of approach might it take to eradicate TB? From looking around the world to countries that have battled with the disease in cattle, we envisage that, to achieve eradication, more stringent cattle controls will be necessary, in excess of existing EU trading requirements, as well as measures to prevent the spread of infection to cattle from TB-infected badgers. Any approach will also need to be practicable and acceptable in the Northern Ireland context and represent long-term value for money.

What do we know about this disease? Bovine TB is a respiratory-transmitted infection that is mainly spread by close contact. It is widely distributed in cattle herds across Northern Ireland, and it also occurs in badgers and wild deer here. The farm structure and management practices in Northern Ireland increase the risks of disease spread, because of fragmented land parcels and extensive use of conacre grazing, which lead to a high level of within-herd movements of cattle. There is also a high level of between-herd movements. Farms in Northern Ireland tend to share boundaries with many more neighbouring farms than farms in GB do, and epidemiological investigations have found farms here that have over 30 neighbours.

We know that in Northern Ireland circumstances the disease risk factors include local contact with infected herds; history of TB breakdown in a herd; high cattle density; herd size; cattle movement; buying in cattle; and the presence of badger setts. Our veterinary officers attribute most TB breakdowns in Northern Ireland to local spread in the area, but we cannot tell for certain whether one particular disease factor has caused a breakdown or whether it is down to a combination of multiple factors. Moreover, it may not be the same factor or combination of factors in play in every breakdown. We know that, to eradicate TB, we need to deal effectively with all the factors.

What are we doing about it? Our rigorous, European Commission-approved TB eradication programme is based on testing to detect infected cattle, removing infected animals and reducing the risks of disease spread through movement controls and other biosecurity measures. Farmers have a vital role to play by taking all reasonable steps to maintain good biosecurity to reduce the risk of infection to their stock. We continue to invest in TB and wildlife research and studies to build the evidence to improve how we deal with all the disease risk factors and reduce TB further. I will say more about that later.

Significant work has been done to enhance the management and monitoring of the programme. That includes internal governance arrangements and arrangements for engagement with industry and environmental stakeholders. The TB programme is approved annually by the European Commission. It is subject to external scrutiny from the Commission, the Northern Ireland Audit Office (NIAO) and the Public Accounts Committee. You will have received a summary of the work done to address their recommendations on TB control. Following criticism from those external sources, we have recently consulted on proposals for changes to the existing TB compensation arrangements.

How effective has all of that been? We know that we have an effective TB eradication programme that has reduced the disease to the current lower levels. We can say that because it is clear that disease levels increased significantly after the programme was suspended for a period during the foot-and-mouth disease outbreak in 2001. Disease levels fell again considerably after the programme was re-established following the ending of the foot-and-mouth disease crisis. Having European Commission approval for the programme safeguards our export-dependent trade in livestock and livestock products, which is valued at over £1,000 million each year. Therefore, in economic terms, the benefits of the programme far outweigh its cost. The £23 million annual cost to government of the programme ensures that that valuable international trade can continue. At any time, around 90% of our herds are free to participate fully in that trade. Having the Commission's approval also allows DARD to claim co-funding from the EU veterinary fund to offset a proportion of our costs. That will enable us to draw down some €5 million each year for 2010, 2011 and 2012.

What do we still not know about the disease? Extensive research has been carried out internationally into the causes of TB, how it spreads, how it can be diagnosed more accurately and what can be done to prevent its spread between cattle and between wildlife and cattle. However, there are still many unknowns. For example, although the skin test continues to be the internationally recognised test for TB in live cattle, we know that it misses a number of individual infected animals, but it does operate well at a herd level. The gamma-interferon blood test, which is recognised by the EU for use as a supplementary test, has practical limitations and is expensive to use. It also provides false positives. There is clearly a need for more accurate and cheaper diagnostic tests to be developed.

I will now deal with the unknowns about badgers. There is no known means of preventing all contact between infected badgers and non-infected cattle. Biosecurity on farms plays an important role. If we knew where the contacts between badgers and cattle take place on farms in Northern Ireland — whether they occur around cattle-housing stores and feed stores, or at pasture, or both — biosecurity measures could be targeted to help separate badgers from cattle.

As the researcher outlined in his presentation, the research findings so far suggest that badger culling is not a clear-cut solution. It presents a mixed picture of its cost-benefit effectiveness in reducing disease levels in cattle, with evidence in England that it caused a perturbation effect and an increase in TB in cattle in the surrounding area. The follow-up to the randomised badger culling trial (RBCT) in England suggests that badger culling has resulted in a 16% reduction in confirmed herd breakdowns after nine years. Culling is also highly contentious with wildlife groups. The current plans to license culling of badgers in England are subject to judicial review from the Badger Trust. We will be interested to see if the proposals withstand that legal challenge.

As regards vaccination of badgers, injectable vaccine has been demonstrated to reduce the severity of infection in badgers. However, it is difficult to administer as the badgers have to be captured and vaccinated individually. Work to develop an affordable and usable oral bait vaccine that would not require individual capture is ongoing in Britain and the South. There is no evidence so far that vaccinating badgers reduces the level of TB in cattle.

At a local level, having made considerable progress in reducing TB herd incidence by around 50%, from almost 10% in 2002 to 4.99% in August 2011, we so far cannot explain the recent increase in TB herd incidence in Northern Ireland over the winter months. We do not know at this stage if it is a temporary rise or represents a change in the relatively level trend that there has been in incidence over the last five years and, if so, what has caused it. Colin will say more about the veterinary investigations into that which are under way.

What are we doing to push for more answers? A key component of our TB eradication programme is research and studies to build further evidence to help deal effectively with all the disease factors. Around £4 million has been allocated from the DARD budget to fund further TB and wildlife research and studies. We have taken a comprehensive look at the evidence needs for TB and commissioned further literature reviews, which were completed in 2011-12, on TB tests in cattle, TB tests in badgers, cattle-to-cattle transmission, badger-to-cattle transmission and badger vaccination. We discussed the evidence needs and their priority with key industry and environmental stakeholders.

A number of studies have been commissioned to help establish local evidence. The results of the TB biosecurity study are expected later this year, and we intend to use them to produce further biosecurity advice for herdkeepers. We have also commissioned an assessment of farmers' understanding of, and attitudes to, applying biosecurity measures when dealing with diseases. Also under way is an evaluation of the use that we currently make in the TB programme of the gamma-interferon blood test. The results will inform the way that we use that test. We will also consider the use of other new diagnostic tests as they emerge. A badger-cattle proximity study which aims to assess the interactions between cattle and badgers in Northern Ireland, both in farm buildings and at pasture, has recently started in a high-incidence area. The results will help to inform where biosecurity measures could best be targeted on farms.

We are hosting an international vaccination experts scientific symposium in Belfast from 14 to 16 May. The symposium will consider all relevant issues associated with vaccinating the badger to achieve a reduction in TB in cattle. That will help DARD assess whether badger vaccination offers the prospect of

reducing TB in cattle, and in what context. We are also looking at further potential studies. During the Budget period, we will continue to commission further TB and wildlife research and studies to guide the TB eradication strategy. We maintain close contact with the research and studies being conducted in Britain and the South of Ireland, including on the development of an oral bait badger vaccine that can be delivered in a cost-effective way. We are also closely tracking all badger intervention proposals in GB and the South on culling, vaccination, tests and so on.

What is the way ahead? We already have a rigorous EU Commission-approved eradication programme. We intend to build a sound evidence base to underpin future interventions in cattle and/or wildlife that could help to reduce TB as part of our eradication programme. In order to push further towards eradication, a future TB programme may need to involve a combination of more testing, tighter movement controls, new or improved measures to reduce the risks of disease spread from badgers, as well as cattle, and changes to current farming practices. However, additional actions must carry reasonable prospects of success. Jumping too quickly to a possible solution ahead of the evidence could prove to be an expensive mistake.

Whatever approach is developed will have to be practical, cost-effective and acceptable in our own particular circumstances. As the badger is a protected species, any intervention in the badger population would require the agreement of the Environment Minister. Any intervention would also have to be compliant with DARD's statutory powers and take into account any relevant legal rulings in Britain. It would also require substantial additional funding.

In conclusion, if doing X, Y and Z would eradicate TB in cattle in a definite time frame, we would do it. We can understand the frustrations that there are with the lack of certainty and guarantees, but the evidence does not yet exist to show that this would be feasible.

Colin Hart will now give a brief outline of the programme delivery, and then we will be happy to take questions.

Mr Colin Hart (Department of Agriculture and Rural Development): As deputy chief veterinary officer (CVO), my main responsibilities include oversight of the delivery of the Department's brucellosis and TB eradication programmes and its efforts on farmed animal welfare. Each of those programmes is headed up by a senior principal veterinary officer, who is responsible to me for their overall delivery. I am accompanied today by Roly Harwood, who manages our TB delivery programme.

Veterinary Service is responsible for the implementation of policy and the provision of veterinary advice to policy colleagues. To enable us to discharge our TB programme responsibilities, a wide range of expertise is required, and I am accountable to the staff who deliver most elements of the programme. Those include DARD testing vets, DARD veterinary officers, livestock valuation officers and specialist epidemiologists employed in our veterinary epidemiology unit. I also have responsibility for the partnership that we continue to build with private veterinary colleagues who deliver TB testing on DARD's behalf. In addition, I am the senior responsible officer for the annual application to the EU for co-funding for the Northern Ireland TB eradication programme.

That list illustrates the diverse elements of the programme. It does not include other parts of Veterinary Service for which I am not directly responsible, but with which I liaise closely. They include our veterinary public health unit, which carries out meat inspection and oversees the hygiene of meat-producing premises on behalf of the Food Standards Agency. We also liaise closely with the veterinary service enforcement branch, the Department's central investigation service and Agri-Food and Biosciences Institute (AFBI) colleagues.

Despite the variety of inputs, critical processes are interlinked, creating a holistic programme structure. That integration is a great strength when it comes to the efficient application of disease controls and the extraction of information, for example in the regular audits carried out on the TB programme by the European Union. The tool that enables that holistic approach is the animal and public health information system (APHIS) computer system. It contains a vast amount of current and historical data on all animals that have been registered in Northern Ireland, including their testing and movement histories. Farmers, private veterinary practitioners (PVPs), market operators and others can access APHIS directly for relevant information. Combined with the capability to update the records in these

locations, APHIS creates a real-time, comprehensive tool for the management of disease and analysis of disease patterns and trends.

I turn now to the delivery of the TB programme. As you know, the fundamental principles of bovine TB intervention centre on the detection of diseased or high-risk animals, the compulsory removal of those animals from their herd to slaughter and the restriction of movements of cattle from infected herds. The current DARD TB programme involves regulation of cattle movements; compulsory annual testing of all cattle herds using the single comparative intradermal tuberculosis test; removal of animals that give a positive reaction to the skin test; and tracing and testing of contacts. The programme also involves routine abattoir surveillance of all slaughtered bovines. Discovery of TB lesions in a carcass leads to TB controls in the herd of origin. Use of gamma-interferon testing as a complementary test is deployed under some circumstances. We conduct 17,000 blood tests per year, which is proportionately more than in GB and the ROI. TB skin testing is carried out by both private vets and DARD staff. The tests are interpreted, and disease control actions are applied by DARD veterinary officers, who also visit the breakdown farms and give public health and biosecurity advice to farmers.

Each breakdown farm is allocated to an individual veterinary officer on the basis of a patch management system, and that veterinary officer retains responsibility for the breakdown until herd restrictions are finally lifted. The patch veterinary officer's responsibilities also include carrying out an investigation into each TB breakdown. Unfortunately, since several farm outbreaks may occur simultaneously on farms in a locality, it is often impossible to determine the exact source of infection in a herd, whether from a neighbouring farm or from an infected badger. That highlights the points that Colette made on the need for further research to develop better tools to assist our understanding.

As Colette said, in Northern Ireland we have a farming system that is highly dependent on the leasing of pasture for conacre. That sets a particular set of challenges for us in that many movements of animals are not required to be registered: the so-called within-herd movements. While such moves are perfectly legal, their estimated scale often makes it difficult to fully evaluate the extent of herd-to-herd contact and the appropriate application of control measures.

Added to that, we still have a relatively high number of official movements of cattle, either directly from farm to farm or through markets. In 2010, the number of such animal movements recorded on APHIS was in the order of 600,000. That compares to a cattle population of some 1.6 million and is proportionately very high. That figure does not include movements to abattoirs.

There are some 800,000 fields in Northern Ireland, with 55 million metres of fencing, 120 million metres of hedgerow and eight million metres of stone walls. Much of that is made up of external boundary fields because of the small fields in Northern Ireland. On average, they are about 1.5 hectares in size. The point that I am trying to illustrate is that, notwithstanding the risk which we believe the badger poses, there is a set of industry characteristics in Northern Ireland that make our situation quite unique in world terms and make TB eradication a particular challenge for DARD and the industry.

I referred to APHIS earlier. Much of our management information comes from that system. We monitor closely the application of disease controls by staff and carefully compare performance indicators across our 10 district areas. These arrangements have been enhanced considerably over the past few years, and we will continue to develop that work. That not only assists in management, but allows us to demonstrate compliance with our co-funding applications or eradication plans.

Statistics show that TB levels have been on a downward trend since 2002, when the herd incidence was 9.93% due to herd testing being suspended because of foot-and-mouth disease. Therefore, it has been extremely disappointing to note a recent rise in TB incidence — it was 6.51% as of February 2012 — not least because the TB incidence was 4.99% at 31 August 2011, which was the lowest that we had for around 15 years. We are continuing to monitor the situation closely to see if that increase represents a fundamental change in the relatively level trend that the incidence has followed since 2007, and, if so, to seek to understand what is driving the change and to counter it.

As you will know, we publish TB annual herd incidence data on the DARD website each month. The rise, which was unpredicted, has occurred across Northern Ireland, with the exception of the Mallusk and Coleraine divisions, and it remains unexplained.

I have recently held discussions to capture the views of the divisional veterinary managers, private vets and stakeholders across Northern Ireland and of internal experts across the Department and AFBI. No definitive reason for the rise has yet been established, but a number of possible factors have been prioritised and are being explored.

Many of the PAC recommendations were relevant to our TB testing arrangements with PVPs. As a result, we have established a TB testing liaison group with the veterinary associations, which underpins our partnership arrangements with private vets. The management of delivery standards for the contractual testing that is delivered by some 300 private vets across Northern Ireland in approximately 80 veterinary practices is an ongoing challenge. However, with the full support of the veterinary associations, we are working hard to maintain standards.

Our programme of audits is aimed at ensuring that testing is carried out to the required standard, whether by PVPs or DARD staff. As a result, our TB test audit arrangements and overall communications with PVPs have improved. For example, over 120 vets recently attended a TB testing seminar that was arranged by the local veterinary associations in partnership with DARD. I know that that work will continue, and I look forward to seeing it develop over the coming years.

I recognise that there are some areas where progress has been slower. One of those is the review of the testing contract that the Department has with PVPs. We have completed the review, but we have not been in a position to move forward with its recommendations. The main reason for that is that we were waiting to see how the tendering exercise in GB developed. As there has still not been a conclusion to that exercise, I have instructed that work should begin on a new contract with private vets, and, to that end, I have set up a formal project, which has been accepted into the Department's overall governance arrangements for change management. It will be a lengthy piece of work, but the benefits in clarity, flexibility and practice accountability should be significant. As you may be aware, we have also recently completed a lay TB testing pilot. The evaluation report has been completed, and knowledge gained from that pilot will be used to inform our decision on how it should be taken forward to meet the departmental target of making £350,000 savings in the 2014-15 financial year.

I hope that I have given you a feel for what we believe is a comprehensive and holistic TB programme. Considerable efforts are being made to improve the standard of our in-house TB programme delivery, and we have been energetic in developing partnership arrangements with private vets to meet many of the PAC report recommendations. Thank you for your attention. We are happy to take questions.

The Chairperson: Thank you very much. Before I push it out to the members, I want to quiz you on the research side of things, because that is what the Department has been doing during this period. Do you recognise the period that you are in as regards the Department's eradication plan? I think you are in a five-year period which is due to end in 2014 with regard to building up a research base on the eradication of the disease. There is no problem with research or finding out new things every day. However, do you think that the £4 million that was allocated in the Programme for Government for research as a building block to tackling — not eradicating, tackling — TB is enough for that very important issue?

Mrs McMaster: Research has always been an important part of the DARD-funded research programme, and it is research for TB. It is not the only piece of research, and we are not just starting that research now. Over the years, substantial work has been done on TB by AFBI, for example, on the development of the gamma-interferon test and the development of strain typing methods to better understand the spread of the disease. There is an ongoing badger road traffic accident survey. That names a few.

We now have an additional £4 million in the budget, over and above what is normally available in the DARD-directed research budget. That is being allocated specifically for further TB and wildlife research and studies. It also comes at a time when DARD has fundamentally changed the way that it identifies and prioritises its evidence needs to help shape government policy-making. We are doing that with TB, as we are with the Department's range of other evidence needs. For the purpose of investment in this particular research, we have comprehensively looked at the evidence needs across the whole area of

TB. We commissioned five literature reviews that were completed in 2011-12 and which I mentioned in my opening words. Those cover the whole range of TB in cattle and badgers, the tests for TB and so on. We have identified and are prioritising those as part of the process that we are in. We have spoken to industry and environmental stakeholders on this. We have taken away their comments and views and are developing options for further research and studies.

So, research is already under way. Beyond the AFBI research that had already been place, we have commissioned the TB biosecurity study, an analysis of the way that we use the gamma-interferon test in the programme and, recently, a study that will look at the interaction between cattle and badgers on Northern Ireland farms. We have other studies in the pipeline that we expect to commission soon. We will host an international symposium of vaccination experts in Belfast this month, which will help inform further decisions about further research and studies. We do not see this as a one-off investment in research and studies; it may need more than that beyond this period.

The Chairperson: That brings me to my point. Everything you and by Colin, in his presentation, have said is about research, which is fine; of course we need research. What I am hearing and have always heard is that it will lead to more research. I have never heard a DARD official, permanent secretary or Minister say that this research will lead to action. That distresses me. You mentioned the eradication plan and the EU eradication plan. However, its content was more testing, better movement controls and better biosecurity. Again, we would love to see the detail of that better biosecurity. You mentioned the changes to farming practices, which again puts the onus on the farmer. That is all well and good, because the farmer, too, wants to eradicate this disease.

Do you understand my point? It seems to be that we are going for research in order that we can do more research. We are coming to the end of this research period in 2014, when we expect to see action. We still do not know DARD's strategy for action on, and the eradication of, this disease. That is what is distressing the Committee and me. In 2009, PAC said that DARD needed to have a more strategic approach to eradicating this disease. Yet, all we hear about are the options of more research. There does not seem to be a strategy, a glimpse or an inkling that, out of all this research, such a strategy will be published in 2014, or, in fact, that you are confident that something will be added into the strategic plan that will lead us to 2020. I asked the permanent secretary last week if he was confident that we can eradicate bovine TB by 2020. He could not give me that confidence. So, you will understand how critical and stressed members are around this issue.

My question around that is probably directed more at Colin and concerns the difference in standards between departmental vets and private vets. Are you still concerned about that differential, or do you feel that it has been eradicated?

Mr Hart: As I said, we have a good partnership relationship with the veterinary associations. We meet regularly, and we seek to ensure that testing is done to the highest possible standards. We manage a contractual relationship with 80 practices and some 300 veterinary surgeons. We have to work at that relationship. We have tried to improve communications. Since 2009, we have sent out statistics twice yearly to the head of each practice in relation to each of their vets who carry out TB testing so that they can help us to manage the situation on the ground. They get a comparative figure of how their testing statistics for identifying non-negative animals compare with the national average.

We are starting to reap real rewards from the partnership working. Recently, with the help of the veterinary associations, we held a seminar. Veterinary surgeons are very busy people, but we managed to turn out 120 veterinarians in the middle of the working day to attend a TB testing seminar. That shows the keenness of the veterinary profession to ensure that it is doing what is appropriate, to hear the latest information and to take it forward. If the Department had organised the seminar on its own, we would not have seen anywhere near the same number of people. That is an example of partnerships in action.

Clearly, we have an indicator; I think that the Committee discussed it with the PAC representative. The statistical measure from the data that we had was that, in 2009, the measure indicated an odds ratio of 1.60, which implies that a Department vet would have been more likely to have turned up a non-negative animal than a private veterinary surgeon. As a result of the efforts that we have made to improve communications, we revisited the audit protocol with private veterinary surgeons and stepped

up the level of audit with the veterinary surgeons and in discussion with the veterinary associations. That, combined with the increased information that we pass back on the individual performances of private practitioners to their practice principals, resulted in the figure going down to 1.19 in 2010. We thought that we were making real progress there. Clearly, it is an issue that we have to manage very closely. The contractual relationship is something that the Department is very interested in.

Last week, we received the 2011 figures, which appear to indicate that the odds ratio has gone back to 1.93. That is disappointing. It is a statistical measure which, obviously, the statisticians have put a lot of effort into. We have had the process quality assured. However, it is a statistical measure; the population of animals that are tested by the Department's vets tends to be the high-risk population. There are good reasons for maintaining that; clearly, the Department has to focus on the high-risk areas. An adjustment is made in the figures for the various types of tests that are carried out. It is the best comparison that we have on the performance of the private veterinary contractors at the moment. Therefore, the fact that the odds ratio has gone up to 1.93 is a matter of concern, particularly as we had been so energetic in our efforts to manage the contractual relationship.

Only this week, we received a letter from the veterinary associations offering to become even more involved in the TB programme. We have been meeting them, and we met to discuss the issue quite recently with the same intention. We want to build further on the partnerships that we have developed. As I said, the efforts are being put in.

We intend to look at other types of measures that we can use for comparative purposes. Although the odds ratio is one measure, we may be able to use other measures to give us a little bit more insight into what is going on.

I think that that answers your question, Chairman. It is an ongoing issue. Mr Harwood leads the liaison group with the veterinary associations. A lot of energy has been put into the issue over several years.

The Chairperson: The biosecurity study in County Down was finished in June 2011, almost 10 months ago. Why have we had no results from that study yet? Are we in a position to publish them?

Mrs McMaster: The fieldwork has been completed, and we are now analysing the data that has been collected. The study overall is not yet complete. AFBI is currently analysing the data, and we expect the results to be reported later this year. When they are, we plan to look at them with stakeholders, and that will give us the opportunity to look at the existing biosecurity advice, which has been available since 2004 — the biosecurity code that was jointly produced by DARD and stakeholders at that time. We look forward to seeing the results of the biosecurity study when they are available.

The Chairperson: Could the evidence from that research be used to wrap it around, say, a farm modernisation scheme, in order to effect practical measures on the ground?

Mrs McMaster: We are engaged with the work looking towards the future rural development programme. My staff are engaged on the teams that are working on that. We will look at all the information that is coming in. We talked about the evidence earlier, and about when we come to the end of it. We will be looking at evidence as it becomes available during that period, rather than waiting until the end of a period and analysing it all. As that comes to us, we will be looking at it.

To return to what we will do with that evidence, hopefully these are not just studies that will simply identify new research areas. We hope that they will give us evidence to identify new interventions and new ways of assisting with the disease. That is something that we will do when we get the results of the biosecurity study. We will have a look at that and see whether we can, first, provide better or new advice for herd keepers and, secondly, find other ways in which to target measures to help to separate, for example, badgers and cattle, and other areas of biosecurity.

I will come back to the point that you raised earlier —

The Chairperson: On the strategy?

Mrs McMaster: Yes. Just to clarify, the strategy is that we have our EU-approved TB eradication plan in place and we are going to continue to implement that. That is important, and we know that that has had an effect. It has reduced TB to the levels that it is at now. We know what will happen if we suspend the plan, because TB levels will rise again. The plan is there, and we will continue with it. Alongside that, we have been open and said that we do not have all the answers. We need to investigate that evidence. We hope to use the evidence to help identify new interventions that can be introduced to improve the eradication programme that is in place.

The Chairperson: Is it really an eradication programme or is it more of a containment programme, whereby DARD is living with the disease? Are we at that point? You can say that the eradication programme, in name, is doing well, and we know what happens when we suspend it, but, in DARD's view, is there an acceptable level of the disease?

Mrs McMaster: We are committed to eradicating the disease. Our efforts through our research are aimed at trying to find new ways to push levels of the disease down. We do not want to jump ahead of the evidence, but we will use it as it becomes available and see what it might mean. You mentioned the range of farming practices and what we know or do not know about badgers and cattle. A future eradication programme may involve dealing with all those issues, and it will look at other countries. We expect that we will need to tackle all the disease risks, and that may involve more stringent cattle controls and tightening up the existing programme, as well as introducing new measures to deal with the risks that we cannot fully successfully deal with currently, including risks from wildlife.

The Chairperson: I have one more question, and then I will open up the discussion to members. In your eyes, how reliable is the testing on roadkill badgers? How much does that form the basis of your research on the badger population?

Mrs McMaster: It is information that is there. As a result of the analysis of roadkill badgers, we are aware that there is TB in badgers in Northern Ireland. Relatively small numbers of badgers were analysed in that survey, and we have the figures here. However, it depends on the number of badgers that are reported as being run over on the roads. Therefore, it is not a robust scientific survey of badgers. We have information from as far back as 1998, and that is included in the information that we sent to the Committee on 27 April. The survey is indicative of the levels of TB in badgers over time, but it is limited to the badgers that are reported to us, and because of that, for example, farmers who have experienced a recent TB breakdown and are very conscious of badger activity will be more aware of badgers.

The Chairperson: Has the Department culled badgers or deer to test for TB at any time in the past 10 or 15 years?

Mr Ian McKee (Department of Agriculture and Rural Development): We did work on deer that were being culled from deer herds around 10 years ago, and there was a rate of about 5% to 6% infected in that deer population. We had a smaller survey around three years ago, and the result was smaller, at around 2%, and because it was a smaller number, there are reservations about the prevalence and, as such, about extrapolating that percentage across the Province.

The figures on badgers have all been taken from roadkill, and although they are small, the numbers give an indication over time. As the Assembly researcher said about GB, the rate fluctuates, and, along with the prevalence in cattle, it has fluctuated over that period. However, the numbers are small, and we would have to do an enhanced road traffic accident (RTA) study to get meaningful figures that could be extrapolated. That is being considered.

Mr Irwin: Thank you for your presentation. As a farmer, I know only too well about the trauma caused to farmers and the problems that they have with testing. Sometimes, the last thing that they want to hear is that a neighbour's herd is down with bTB and that tests have to be done every four months.

TB has been with us for many years — probably the past 50 years — and we have been going down the same route. The levels fell in the late 1990s, rose in the early 2000s and then went back down

again, but not to the same levels seen in the 1990s. We are all aware of the badger issue and that, to some extent, badgers do create a problem.

I see that there is the possibility of an oral vaccine becoming available in the next couple of years. That would be very welcome. There needs to be a different approach taken, because I do not think that you can eradicate TB simply through testing. I am not a vet or a scientist, but I do not think that that is possible. We have to vaccinate children against TB, and, to this day, TB is a killer in many parts of the world. What is the situation with a vaccine for cattle? I am told that one is being developed but that its use has not yet been cleared by the EU.

Mrs McMaster: You are right: cattle vaccines are prohibited under EU legislation through Council directive 64/432/EEC. That is because the only possible vaccine candidate for use in cattle interferes with the current tuberculin skin test. The vaccinated cattle would, therefore, react positively to the test, which would obviously be an issue for trade, and so on.

Mr Irwin: I imagine that if cattle were successfully vaccinated quite early in life, there would not be any need for the skin test.

Mrs McMaster: There is quite well-advanced research in the area. The Department for Environment, Food and Rural Affairs (DEFRA) has done a lot of research on developing a viable cattle vaccine. I mentioned the fact that vaccinated cattle would react positively to the current test. Therefore, DEFRA has done quite a bit of research to develop a test that differentiates between infected and vaccinated animals. A lot of progress has been made. However, at this stage, much still depends on trialling in field conditions, getting approval for the vaccine from the European Commission and then, beyond Europe, securing agreement from anyone who is involved in taking animals from our export markets. As I said, a lot of progress has made in that area. However, the issue now is around bringing that to completion by getting agreements with others.

Mr Irwin: Does the Department work with those involved to try to get this to work? Is the Department in discussions with the company that makes the vaccination? Is it in discussions with Europe to see whether it is possible to get approval for something like that here?

Mrs McMaster: The research is DEFRA-funded, so it is taking the lead on that and on the discussions with Europe. That certainly is happening. Through regular liaison meetings, we maintain close contact with the DEFRA teams involved.

Mr McKee: The DEFRA-funded research is done by the Animal Health and Veterinary Laboratories Agency (AHVLA). It has been taking that forward and doing a lot of work on it. The research seems quite promising, based on all the information that we are receiving. As Colette said, there will be difficulties getting approvals. For a start, rigorous analysis has to be done in field conditions. The findings then have to be presented to the Commission, and the Commission has to be absolutely satisfied before it takes those findings to other member states. There is then the difficulty of negotiations with other chief veterinary officers. Therefore, it will be a long process; it will not happen in a year or two. It would, therefore, be unwise to give any indication that it will be a panacea immediately.

There are also trade issues, in that even if Europe were content with the vaccine, would international trading partners outside Europe be content to receive animal or livestock products coming from vaccinated stock? All those issues have to be gone through. Building and documenting the evidence is quite a tortuous process. Furthermore, if there is no prospect of progress and success, do you keep putting money into it? At this stage, it looks promising, but decisions will have to be taken within the next year or two as to whether it will run.

Mr Irwin: Let us hope that there are moves in a positive direction.

Mrs Dobson: Thank you for your presentation. Colette, I wrote down a few quotations from your comments. In your briefing, you referred to "more stringent cattle controls", "further research" and how you intend to build a "sound evidence base". If we asked for it, could you provide the Committee

with maps and statistical information showing the spread of different strains of TB from farm to farm across Northern Ireland on a historical basis? Am I right in saying that that information already exists in DARD?

Mrs McMaster: We have information, but whether we have maps and statistical information for all the farms, I am not sure. It is something that we would need to take away, think about and take advice on. AFBI has conducted strain typing.

Mrs Dobson: Are you aware whether DARD has those details?

Mrs McMaster: Yes. We are provided with the information by AFBI, but I am not sure to what level. Perhaps my veterinary colleagues can comment on that.

The Chairperson: By way of information, there is a map showing the breakdown for 2011, titled "Tuberculosis breakdowns 2011", which highlights new and chronic outbreaks. That is for only one year, however.

Mrs Dobson: I am talking about the strain as it spreads — as a common cold spreads — from farm to farm and maps that show that.

Mr Roly Harwood (Department of Agriculture and Rural Development): AFBI has done the work, and its representatives are sitting behind me. They can give more detail later. Yes, maps can be produced that show the different strains and how they cluster in Northern Ireland. At the moment, our veterinary officers have access to that information, so they can speak to experts in AFBI and find out what is the predominant strain in a particular area, whether the strain that they are dealing with is new and what is happening with the disease. At present, information cannot tell you the sequence of breakdowns, but it can give an indication of what is happening in an area and across Northern Ireland as a whole.

Mrs Dobson: Can we find out how far back that information stretches? You have historical detail, including information on strains of the disease and its spread from farm to farm. I declare an interest, as I am a farmer who has had some experience of TB. Why have you failed to use that valuable resource to come up with an effective eradication programme based on the documented facts? You can pinpoint the exact strain and its movement.

Mrs McMaster: We have that information, and it is used by our veterinary officers in the field, so we are using it. One of the points that Roly has just made is that the information does not tell us what the sequence of movement is, in what direction the infection is transmitted or the time sequence. That is possibly what he is saying.

Mr Harwood: That is what I am saying. It is a very useful tool, and it certainly allows our vets to understand more about what is happening in an area and us to understand how strains cluster and move. However, we still have to investigate each breakdown and see where the infection could have gone and from where it came.

Mrs Dobson: That is very useful. As a Committee member, I find it strange that I was not aware of that. I was made aware through a reliable source that the information does exist. In order for the Committee to make decisions on TB, it would have been very useful for us to have known of its existence. From what I have heard, it is useful for following the pattern of the strain.

Is the Minister aware that you hold that historical data? Has she seen it? It might help her to make decisions on the eradication process.

Mrs McMaster: We are very happy to provide whatever data the Committee wants.

Mrs Dobson: It is just that we have so much information on TB, and to me that is very important. It is important for the Committee to see those maps, which I have been told exist.

Mrs McMaster: We can provide that information. It is questionable as to how much they will tell you, and explaining that is the problem.

Mr Hart: To reiterate, AFBI will be able to give you much more information on that. I have sat through some of the presentations from AFBI, and what immediately strikes you when you see the maps is that the strains of TB across Northern Ireland are clustered geographically. You can see all the points on the map in a particular area, and the strains of TB are found in the RTA badgers in the same area. Where the tool is particularly striking is in cases in which an animal has moved from one part of the country to another and has carried with it a strain of TB that is not regularly seen in one part of the country. When the veterinary officer does an investigation into an outbreak, it is very convincing to say that the outbreak was caused by a brought-in animal rather than an animal that became infected when it arrived at its destination. Say it had been there for a long enough period to pick up TB; the fact that it carried the TB from its home area is very impressive.

Where the disease strain is the same, we are left with the question of local spread. A lot of our veterinary officers, when they carry out the epidemiological investigation, come up with the conclusion that the outbreak was down to local spread. "Local" could mean badger spread or local farm-to-farm spread. Colette has alluded to the fact that we do not have all the tools in our box to eradicate disease.

Mrs Dobson: It was a reputable source in DARD that highlighted the tool to me.

Mr Hart: Yes, it is a very powerful tool.

Mrs Dobson: It is a very powerful tool that can show the movement from farm to farm.

Mr Clarke: We have seen it before — in this Committee during the previous mandate.

Mr Swann: A previous Committee, yes, but not this Committee and not during this inquiry.

Mr Clarke: We saw that in the Committee during the previous mandate. Then, maps were brought, and one of the interesting things highlighted was that the infection never crossed the border, which amazed me because it meant that badgers know where the border is. The badgers in question are Northern Irish, because the incidents never happened in the parts of the South close to the southern part of Northern Ireland, which is amazing. How statistics were collected in the Republic amazed me.

I do not know whether you were here on that occasion, Colette, or whether you were in the position that you are in now. If you remember, Chairman, I asked last week for the map showing the incidents, because I had been previously amazed that badgers can travel from farm to farm and to different regions, as Jo-Anne mentioned, but never manage to cross the border into the Republic.

Mrs Dobson: Do you not agree, Trevor, that it would be useful to have included that research in this inquiry?

Mr Clarke: Yes.

Mrs Dobson: I was not on the Committee in the previous mandate, and I only know about this because a reputable source in DARD highlighted to me that the information exists. I was not made aware of it in Committee, but it would have been useful had I been. Is the Minister aware of the data?

Mrs McMaster: I cannot comment. I am not sure whether, from a veterinary point of view, she has seen the maps.

To outline what we are doing as a result, we have the information, which is provided to our Veterinary Service and to our veterinary officers who are in the field working. That will continue, but one of the studies that we are also considering is commissioning an analysis of all the data that has been collected to date.

Mrs Dobson: It would have been useful for the current Committee to have all those details on such an important piece of information. May I ask Colin a question?

The Chairperson: Yes.

Mrs Dobson: Colin, you claimed that DARD vets have a greater level of success in classifying herd breakdowns than private vets. However, is it correct that DARD vets mainly only come out to farms where there have been reported breakdowns? Do you agree with me that, because they do the majority of their testing following an outbreak, DARD vets are more likely to have a higher detection rate than private vets?

Mr Hart: Yes, it is true to say that the vast majority of annual testing in Northern Ireland is carried out by private vets. Indeed, quite a lot of the risk testing and check testing of contiguous premises is carried out by private vets. In the main, the departmental vets focus on TB breakdown situations in which you would expect, by and large, there to be a higher likelihood of infected animals.

Mrs Dobson: It is pretty obvious that you would, when they are called out to —

Mr Hart: That is right. The odds ratio that we referred to earlier has been adjusted by the statisticians to take account of the various herd types. I am not a statistician, but the measure that we use for comparative purposes has been worked by statisticians to equalise the influence that herds with a higher incidence of the disease would have against the others. I think that that is the —

Mrs Dobson: Would it be fair to say that it was not a fair comparison?

Mr Hart: We are told by the statisticians that it is a fair comparison. We have made efforts to have the process independently verified. We have not just used our own statisticians. We have had it verified out-of-house. As I said, I am not a statistician. It is a good question, because on the face of it, it would appear that we are testing two different populations of cattle.

Mrs Dobson: It is not like for like. I know that from my own experience of seeing DARD vets on the farm following a breakdown. I know that that is the case for many other farmers, so it is bound to have an impact on the reported success of the DARD vets.

Mr Hart: The statisticians tell us that it is like for like, and that is what I have to go on. Although there is enough commonality between the populations of animals that the two groups of testers test, the figure is calculated not over one year but over many years, so as to average out. You are right that there would not be enough data in one year to give the answer, but the statisticians tell us that the concern that you have evens out over a number of years, and that that is a real measure. Having said that, I am not a statistician, so I have to go with what —

Mrs Dobson: Do you know the ratio between DARD vets attending call-outs in response to an outbreak or the annual herd figures? Is it 50:50, 60:40, 70:30 or worse?

Mr Hart: I will clarify, Chairman, about call-outs in response to an outbreak. We call out to investigate an outbreak, but I think that the member is talking about the testing of the herd rather than the call-out. The odds ratio of finding an animal testing non-negative in 2009 was 1.60 more likely for a DARD vet; it went down to 1.19 in 2010; and it has gone back up to 1.93 in 2011. On the face of it, that means that a DARD vet is more likely to come up with a non-negative animal in a situation that is adjusted for the lack of commonality between the two populations of testers.

Mrs Dobson: I know from my experience that seeing a private vet and a DARD vet are not comparable.

Mr Hart: I am a bit like you, in that I would go by what is in front of me, but the statisticians tell me that the figure has been equalised statistically.

The Chairperson: Trevor Clarke.

Mr Clarke: Thanks for calling me to follow on on that point, because I like the questions that Jo-Anne is asking. Could we get a wee bit of research done and more information on that subject? It is wonderful the number of people that are employed in this industry and it is wonderful how we can make ourselves look particularly good on the basis of stats, but I would like to analyse stats myself. It depends on how you present statistics and what sort of picture we are portraying. Look at the amount of money that the Department is investing in, or wasting on — whatever way you want to look at it — the eradication programme. I suggest that an awful lot of money has been wasted as opposed to being invested. If the rest of the members are content, Chairman, it would be useful if we could get that research.

Did I read somewhere today that there was no incidence in the Mallusk area?

Mr Hart: There has been no increase in the Mallusk area.

Mr Clarke: I looked at a map and saw that there was no incidence in Mallusk. Perhaps it is because the map is in black and white.

Mr Hart: It is a very low incidence area compared with the rest of Northern Ireland, but it has —

Mr Clarke: When I look at the other table of compensation claims that you have provided today, I see that, where there have been cases of multiple compensation claims, Mallusk has had four, as opposed to Ballymena having two and Londonderry having one. If there is no increase, or the number is very low, is there any reason that that particular area has got a high compensation claim rate?

Mr Harwood: It just depends on the nature of outbreaks that occur. Although Mallusk is our lowest-incidence division, that does not mean that it does not have TB.

Mr Clarke: I suppose if you want to play with stats it would be useful, but that is not giving us a very informative picture of what is happening in terms of multiple compensation claims. Armagh has 11. What percentage of the overall claims are multiple claims, as opposed to all of the rest of those in that table? That is giving us a very small snapshot of multiple claims, but what does 11 represent? Eleven of how many, and, in the same vein, four of how many? If we are saying that it is four of a very small amount, in Mallusk there seems to be a problem where we are having multiple claims.

The Chairperson: That was misleading — well, the way it was put was unfortunate rather than misleading. That table actually shows 104 herdkeepers receiving more than £50,000, so it does not necessarily represent multiple claims. Is that right?

Mr Harwood: That is absolutely right. It is very difficult, certainly in the space of a week, or less than a week, to get that information, because we would need to look at every breakdown to see whether there were multiple claims. We have the claims based on each time there is a payment made, so if someone is down with TB, they could have two or three tests, and within that they would have three claims, or else they might just have one claim and one breakdown, and then a year later have another. That is just a rough indicator. You are quite right that it does not take into account the number of herds in a particular district or the level of disease.

Mr Clarke: For that reason, it is not giving us a very good indication of what is taking place on the ground. I appreciate that they have only had a week, so we could give them another week. If we could get the information for next week, that would give them two weeks then. I suppose the same could be said for the statistics in table B. The Clerk saw me with my calculator, but she had already beaten me to it. I would never want to put a Clerk or civil servant in the position in which they are thinking the same as us, but they probably thought, like me, that again we do not have all of the information provided that we need. Some of us were calculating here today. Colin, when did you see the decrease in incidence?

Mr Hart: Are you referring to the time after the 2001 foot-and-mouth disease outbreak?

Mr Clarke: You saw an increase, or a decrease?

Mr Hart: We saw an increase after the 2001 foot-and-mouth disease epidemic. The annual herd incidence was nearly 10% at that point. Following that, in response to a fairly intensive TB testing catch-up programme — because a lot of the annual herd tests had been missed in 2001 — the disease incidence came down fairly sharply, until around 2006. What we have seen since 2006 is a relatively level line of disease. In 2010, again we saw a fairly steady reduction in disease. It reached its lowest point in August 2011, when it was under 5% for the first time in many years.

Mr Clarke: Go back to the stats again and look at roadkill. How much weight do you put on roadkill and animals that are picked up and tested on the road?

Mr Hart: Colette was trying to touch on that too. There is a population of badgers that, for one reason or another, ended up being killed on a road. Does that tell you anything about their health at the point when the road accident occurred? What we know is that a percentage of those badgers have TB. What is more difficult to know is whether that percentage represents the level of disease in the entire badger population. Do the healthy badgers have the same incidence of disease, or do they have a slightly lower incidence, perhaps, by nature, because of the fact that they are healthier?

Mr Clarke: But the test should give you an idea of whether they have or not. It has given you an indication.

Mr Hart: We do not get testing healthy badgers.

Mr Clarke: I am talking about the ones that have been killed that are part of your survey. In terms of the ones you have surveyed, you will have an indication of whether they are carriers of the disease or not.

Mr Hart: Yes; it is very accurate because of the post-mortems.

Mr Clarke: Do you believe that it correlates with the outbreaks in particular areas or not?

Mr Hart: As we talked about, the strains correlate. The actual —

Mr Clarke: And the percentages of those that were examined against those that were confirmed to have had the disease?

Mr Hart: I do not believe that that correlation exists. Roly, do you want to pick up on that?

Mr Harwood: Can you repeat the question, please?

Mr Clarke: The correlation between those that have been killed on the road, whether they were infected or not. What is the purpose of this diagram that we have been shown today? It shows that in 1998, three were killed and one was a confirmed case, which represents 33% of the population of those that were killed having TB. The figures for 2001 do not, in my opinion, correlate with what Colin said about the normal incidence because we had four confirmed out of 20, which is 20%. According to this, it did not peak until 2002, and it has got worse since 2006 because 100 were killed on the road in 2006, and 10 of those were infected, which creates the 10% of the population of those that were killed on the road that were infected. It dropped to 6·8% in 2009, and it has risen as high as 13·54% since then.

Mr McKee: Because the sample is small, it is only indicative over time. You cannot extrapolate and say that this is a definitive position. There may have been a reduction in more recent years broadly equating to the reduction in cattle but, because the numbers are so small, you cannot put a scientific basis on it. It fluctuates from year to year, and it depends on where the animals were killed, who picked them up and how quickly they were brought to the veterinary services division for testing.

Mr Clarke: I find it a bit misleading to have that as part of the inquiry, if you look at the stats. The year with the highest percentage of road deaths was 2011. I am sure that that is why Stella did the same in trying to work out percentages. If you look at it quickly, it shows that there were 136 and, oh dear, 17 of those were killed. However, that really only represents 12% of the population of the badgers that were tested. In my eyes, that causes confusion. I do not know about the rest of the members but, to me, it confuses what we are trying to do with the inquiry.

The Chairperson: I suppose that it demonstrates how DARD is doing it and how it samples its badger population.

Mr Clarke: It sounds like it does not actually demonstrate anything. If, as Ian suggested, it is a very small sample and he is not putting any weight on it in terms of the outbreaks, then it is nearly a waste of time including it as part of the inquiry's evidence. Why is it even going through this practice? There is a cost applied to doing it. I assume that the tests are paid for by the Department.

Mr McKee: Yes.

Mr Clarke: What is the purpose of wasting more money carrying out those tests on those animals if it does not play a part in eradicating the disease? They are dead: bury them.

Mrs McMaster: It is background monitoring information, really.

Mr Clarke: It seems like a waste of money to me.

Mrs McMaster: At this present level, it very much depends on how many badgers are notified. There are no specified numbers to be surveyed. It is not from that point of view.

Mr Clarke: You would not be suggesting, Colette, that people are not notifying the Department that there is an animal on the road because of the fear that it is diseased? That is not what you are saying, no?

Mrs McMaster: I am not sure. Different people might notify the Department for different reasons. We believe that there is the possibility that farmers who have a TB breakdown on their farm are attuned to TB and may well report seeing a dead badger because that is very much in their mind. It really very much depends. By adding the last sentence, we tried to explain that it was only roadkill badgers that were tested, and that it was not a robust survey.

Mr Clarke: It is certainly not.

Mrs McMaster: We provided the information and it is there as background information.

The Chairperson: I remind members that we are running very late. Can we keep our answers succinct and our questions directed please?

Mr McMullan: That always happens when I start to talk.

The Chairperson: It is not just you, Oliver; it happens to everybody.

Mr McMullan: I want a survey done on that, because it happens every time that I want to talk. Is there any correlation between the foot-and-mouth disease outbreak and the drop and the rise again? Do you think that there is something there that should be looked at again, or do you think it is a fact of numbers?

Mrs McMaster: It is very much as Colin explained. The normal TB programme was suspended during the foot-and-mouth disease outbreak, because of the disease risks of foot-and-mouth disease, and so on. The routine testing stopped, so we were not detecting where there was TB infection on farms, and we were not removing that TB infection from farms during that period. That meant that when we

resumed testing after the foot-and-mouth disease crisis, we found more TB on farms. It is getting back to the eradication programme, which is based on testing to detect disease and to then remove it, if infected animals are detected. Some of those infected animals may have been there and remained there until they were detected after testing was re-established. We believe that that was part of it. Perhaps, from the veterinary point of view —

Mr McMullan: Am I right in thinking that that testing for TB was done on farms that were not affected by foot-and-mouth?

Mr Harwood: Yes.

Mr McMullan: So, the farms that were affected by foot-and-mouth were not tested afterwards for the new stock that came in?

Mr Harwood: They would not have been tested until the new stock was in, obviously, but the bulk of the testing after the foot-and-mouth disease outbreak was done on the herds that were not depopulated as a result of foot-and-mouth.

Mr McMullan: That would have been on a kilometre base right round the affected area of the kill zone and the area affected by foot-and-mouth. So they have actually expanded the area out.

Mr McKee: I think we are confusing two things. The whole of the TB programme across Northern Ireland halted because of foot-and-mouth disease. There was no testing for TB on any farms, because everybody was dealing with the foot-and-mouth disease outbreak. The disease rose across the Six Counties.

Mr McMullan: Did the incidence of the disease rise in areas outside the foot-and-mouth area more than it did in areas inside it? I am looking at the list that we have here.

Mr Harwood: Newry is one of the areas in which there was foot-and-mouth disease, and, traditionally, it has had a relatively high level of TB. On the other hand, Newtownards, which has the highest incidence and, historically, has had the highest incidence for quite a few years — probably going back to the foot-and-mouth disease outbreak, or to that time — did not have a foot-and-mouth disease outbreak. So, although testing there would have stopped and animals would not have been moving, once testing resumed there were no animals removed in the Newtownards area.

Mr McMullan: That is what I am saying. The point I am making is that most of the areas that suffered badly with foot-and-mouth are not on that list. However, we will not dwell on that; that is the only point I am making, but it is food for thought. There are areas of high incidence on that list which did not have foot-and-mouth disease. That is why I am asking you if the foot-and-mouth thing is a debate or argument within the area of trying to pinpoint this whole thing about TB. I do not think so.

Mr Harwood: I do not think so either.

Mr McMullan: From my point of view, the foot-and-mouth disease information is misleading, but not so much on the other arguments.

You say that there is a winter rise in TB. Is that a new thing?

Mr Harwood: No. It is a seasonal rise, when the animals are tested. You always get a rise starting around October, and it lasts until after Christmas. It goes up and down.

Mr McMullan: Is there an incubation period with TB? I am trying to find out whether there is a connection between summer and winter and between outdoor and indoor cattle.

Mr Harwood: Not to that extent. There is an incubation period. After an animal is infected, there is a period of about 60 days before it will react to a test, but you cannot link it like that. There is so much variation that you cannot generalise to that extent.

Mr McMullan: But would that not be a place to start working from? If there is the 60-day period from contact, through incubation to testing positively, are we testing at the right time to see whether the rise in winter numbers is to do with cattle being kept indoors or outside? I am talking about nose-to-nose contact, where people share buildings to winter cattle and all of that. I am trying to get round that. That is not coming up in the reports here, but it is a reasonable point to have a look at. Am I right?

Mr Harwood: It is difficult to answer. The disease can spread at pasture and in the house. The majority of our testing is done in the house. I am struggling to come to the point of what you said. I am sure that there will be something in it, but I do not think that it will make a difference overall to the incidence of disease. At one time, quite a few years ago, we made a point of trying to test every herd in certain areas before they went out to pasture. The idea was that, if they had been sprayed in the house, we could take those animals out and that would leave them free at pasture. It actually made very little difference — no difference really — to the spread of disease.

Mr McMullan: So there is no difference in that there, either, then? That is something that could be thrown out of the report, too. We are whittling this down well.

Mrs McMaster: On that last bit, we have a proximity study under way that is looking at the interactions between cattle and badgers on farms. I hope that that will give more information about the sorts of areas that —

Mr McMullan: What I was getting at about house cattle was whether there is something to do with the feed. Cats, for example, are notorious for getting into feed bins and can have a terrible effect on sheep during lambing. I wondered whether it was the same with cattle. If you think that there is no correlation, fine. It is either in or it is out. The last thing that we want is any more of these kinds of graphs that really have no bearing at all on the report. We could talk about this all day and get nowhere.

On biosecurity, your report from the veterinary people on the written submissions to the review of bovine tuberculosis made interesting reading. They are cautious about something that we dismissed in the report — the deer population. Do they throw caution in there? Is that something that has to be done? We do not seem to have really looked at that.

Mrs McMaster: We did some work looking at TB in wild deer. A fairly small sample was taken on that a few years ago that looked again at groups that had been surveyed at an earlier time. The survey was not big, but it gave an indication of the sort of levels of TB in deer, and I believe that they had not increased since the earlier survey.

Mr McKee: TB in deer seems to be less of a respiratory disease and more of an enteric and internal disease rather than a spread. It may be a factor in certain areas, and it should not be dismissed; you are absolutely right. I have seen deer moving through what I would have considered to be stock-proof hedges, and they ghosted through them. They can get into areas that you would never expect them to. Roly can give you instances and certain breakdowns near to forestry where deer have been considered, so it is not something that we dismiss and say that it cannot be deer. In the big scheme of things, it is a factor, but is it a big factor? Should we throw a lot of resource at that or other things? Part of the difficulty with TB is that there are so many unknowns, as we have been pointing out. There is so much that you could do. We talked about £4 million; you could spend £24 million researching TB and never get to the end of what we do not know. There are issues that we have to come to decisions about, and we have to focus and concentrate our resource on them. Deer is one. I agree that it should not be dismissed, but it may not be the big one. It should be borne in mind.

Mr McMullan: I am nearly finished. Although we recognise Scotland as being the lowest base for TB, we have no real mention of Scotland and how it has managed to keep the levels down. The farming practices there are nearly the same as ours. Are we taking any soundings of that?

Mr Harwood: Yes. We met the Scottish CVO a couple of years ago when they had just been given their freedom of disease. I have to emphasise that what they have done is they have got the disease down to a particular level. It still exists, but they would say that that is mostly due to imported animals from either England or Ireland. When we asked what they did to get rid of the disease, they said that they never really had the disease to start with; they did not have the burden of infection in their cattle or wildlife population that exists elsewhere. Their farming is a lot more extensive. Where we might have 10 or 15 neighbours to each breakdown farm, they have maybe one or two. It is a different environment. Their surveillance would not have been as frequent as ours. We test every year; they were probably testing their herds every four years. It just did not spread like it did here, and that is a historical thing.

Mr McMullan: Do more mandatory conditions need to be put into farming today? It is interesting that the vets are saying that the farming family today take TB more as a fact of life than a disease. How do you awaken the farming family to the fact that it is a serious problem? Are enough mandatory conditions, such as biosecurity, put on farming? At the end of the day, it is going to come down to quite a lot of that. Too much is left for people to do voluntarily, and we hope that it is done. Should more mandatory conditions be put in?

Mrs McMaster: Biosecurity is one of the important areas, although a whole range of things are important. DARD needs to work with the industry to do it. As others have said, it is as much a problem for the industry as it is for DARD. We want to work with the industry and the stakeholders to help to tackle it. It is really about looking at what the issues are. We know some of them. We are looking at biosecurity — we have had a biosecurity study — and we are looking at the contacts that happen on farms between badgers and cattle. When we get the results, we will discuss them with our stakeholder colleagues to see what we do next, what options are practical, voluntary or mandatory, and what the options are for improving how we tackle TB in Northern Ireland. Some of the things that we have to think about may be quite difficult. Other countries have had to tighten up on movement restrictions, controls on farms and so on. Whatever it is, it has to be workable in Northern Ireland, so it will require very careful consideration and discussion with our farming industry representatives and other stakeholders to see what way we go forward with this.

Mr McMullan: Do you not think that that should be there now, because that is going to be another forum for debate, debate and debate? It will be two to three years down the road before testing can be done and vaccines come through, but we have a chance to put biosecurity in now. Biosecurity is mentioned in your report quite a lot. Vets and everyone have come up with that. Can we not come up with a simple plan of biosecurity that would help, and get it out there to see what can be done? The argument is that we are doing nothing, only talking. Something like that would dispel that and go some way to do what the veterinary people have said in their summary. Biosecurity comes through quite a lot in their report. Can that not be done, or is someone scared of saying yes in case we ruffle the feathers of the farming community and drive the badgers over the border?

The Chairperson: That is a very valid point, and I ask you to be succinct, because we have to move on to Robin.

Mr McMullan: That is just one point that I want to make. That should be done now. A programme on what could help should be introduced now or brought to the table.

Mrs McMaster: We are considering the topic of biosecurity. We have commissioned a study, which is under way and is coming to a close. Later this year, there will be a report, and that will be a good opportunity for us to look at where we take this next.

Mr Swann: Folks, where are we on the removal of reactors from farms? What is the time frame on those?

Mr Hart: We have some figures for you on that. We have a departmental target of 15 working days, and the EU target is 30 working days for removal.

Mr Harwood: Last year, our median time for removal was 9.6 days, and 86% were removed within 15 working days and 97% within 30 working days.

Mr Swann: And the 3% over that — how long were they on for? You said that you had 97% within the 30 working days. There were 3% over that. How long did they stand?

Mr Harwood: I am not sure of the detail of that, but, with each case that does not meet the target, we investigate why.

Mr Swann: You gave a median figure of 9.6 days. We can talk about statistics all day. What were the mean and modal averages?

Mr Harwood: I do not know. We only look at the median, because of the way that they are grouped. If one farm has 50 reactors and removal of all of them is delayed, it messes up the average figures.

Mr Swann: It makes it look worse, is that what you were going to say?

Mr Harwood: It is a matter for statisticians. We use the median. That is our standard method of reporting, and we use it as an indicator in our overall statistics. On the management of the removal, we look at the herds and the animals on a monthly basis.

Mr Swann: What are the main obstacles that you come up against in getting reactors off farms? What are the time frames?

Mr Harwood: First, we have an arrangement with a contractor who provides the hauliers to remove them. If the disease level is normal in respect of the numbers affected, we can get the animals away efficiently. However, if there are a couple of outbreaks that push the numbers up, that can slow it down. Moreover, it is in legislation that if people do not agree with the valuation, they can appeal it. If people choose to exercise that right, that can delay things. Equally, if you have animals that are not fit to travel for welfare reasons — perhaps they are coming up to calving or have been hurt in some way — removal can be delayed until the issue is sorted out.

The Chairperson: That is all the questions. I thank the officials for coming today. Thank you for your presentation and evidence. We are very appreciative.