

Chapter 6

Notifiable Diseases

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1. Introduction

1.1 Purpose

1.1 Purpose

1.1.1 Background

The prompt identification and notification of certain animal diseases allows the FSS, Animal and Plant Health Agency (APHA) and Scottish Government to take action to prevent the spread of the disease. This chapter covers day to day procedures in notifiable disease monitoring and surveillance.

When an outbreak is declared, emergency instructions will be issued at the time, since different rules may apply depending on the specifics of the case.

1.1.2 Legislation

Powers to control notifiable diseases are derived from the Animal Health Act 1981 (as amended) and specific Orders made under the Act or Regulations made under the European Communities Act 1972.

1.1.3 Enforcement

The legislative powers are usually enacted by APHA staff or Local Authority (LA) inspectors. Some FSS staff are authorised under the legislation to undertake certain functions. The legislation is enforced by Local Authorities (LAs).

1.1.4 Introduction to FSS duties

FSS staff has a duty to notify the Secretary of State or Divisional Veterinary Manager (DVM) of any suspect case of a notifiable disease that they may encounter during the course of their work. In practice, they will deal with the Duty Veterinary Officer (VO).

The decision whether to take further action or not rests with the Duty VM and it is the responsibility of the OV to report suspect cases for the decision to be made by APHA.

Also, the FSS participates in monitoring and surveillance schemes aimed at the detection of certain notifiable diseases.

Note: 'Suspect animal' includes any animal in which disease is suspected and any animal which came from the same premises of origin.

2. Action on Notifiable Diseases

- 2.1 Current notifiable diseases
- 2.2 FSS responsibilities and action
- 2.3 Responsibilities of APHA
- 2.4 Other responsibilities
- 2.5 Detained meat storage
- 2.6 Cleansing and disinfection

2.1 Current notifiable diseases

2.1 Reporting notifiable diseases

Any person who suspects a notifiable disease has a duty to report it to the Duty VM. A table of notifiable diseases and further guidance can be found on the following websites:

OIE Listed diseases 2012: OIE – World Organisation for Animal Health

<http://www.defra.gov.uk/animal-diseases/notifiable/>

2.1.2 Bluetongue

The whole of GB is now part of one Lower Risk Zone for Bluetongue and no movement restrictions apply. No action is currently required by the FSS. Emergency instructions will be issued in the event that this changes.

2.2 FSS responsibilities and action

2.2.1 When to report

The OV must immediately report suspicious signs of notifiable disease in:

- live animals or birds
- carcasses and offal

If the OV is not present the MHI must consult an OV before reporting a notifiable disease, provided that such consultation will not cause undue

delay. Reports of notifiable disease are to the Duty VM at APHA and to FSS Operations. The OV (or MHI where applicable) MUST keep a written record in the daybook of the time when the suspect cases were reported and the name of the person making the report. The OV (or MHI where applicable) must follow precisely the instructions given by the Duty VM. The period between when the OV (or MHI where applicable) reports suspicion of disease and arrival of the VM into the establishment may be critical in controlling the spread of disease.

2.2.2 Reporting details

Provide the following information to the Duty VM:

- the plant name, address and contact telephone number
- the animal's breed, age, sex and identification mark(s) (Eartag number or slapmark)
- details of any clinical signs and history in the suspect cases and any in-contact animal from the same establishment
- details of the lesions found during meat inspection
- the name, address and the holding (CPH) number of the establishment where the suspect animal or carcass(es) came from; this will allow APHA to arrange an investigation at this establishment if needed

2.2.3 Instructions from APHA

Instructions given by the Duty VM could include:

- isolating the animal until an investigation has been completed
- restricting movement of all animals, birds, products, vehicles or people into or out of the slaughterhouse until an investigation has been completed
- stopping slaughter

2.2.4 Record keeping

The OV must keep a contemporaneous record in the daybook of all instructions received from the Duty VM and confirm that they have been followed.

2.2.5 Cleansing and disinfection

No disinfectant should be used on or near animals, birds or carcasses suspected of disease, while waiting for the VM to attend, as this may adversely affect the likelihood of correct laboratory diagnosis.

2.2.6 Consultation cases

Providing that the OV is in the establishment and remains there, APHA may decide to deal with the investigation as a 'consultation case'.

A consultation case takes place between two or more veterinary surgeons when one of them considers that a notifiable disease may be included in the differential diagnosis for a specific case, but the probability of it being that disease is very low.

The OV should discuss the report of disease with the VM on arrival at the establishment.

The VM will place restrictions only if the result of the consultation is that a notifiable disease is suspected.

2.2.7 Report case

In other cases, APHA may call the case a 'Report Case' and place specific restrictions on the establishment pending veterinary enquiry. These restrictions may affect the movement of animals, products, people and vehicles from the establishment.

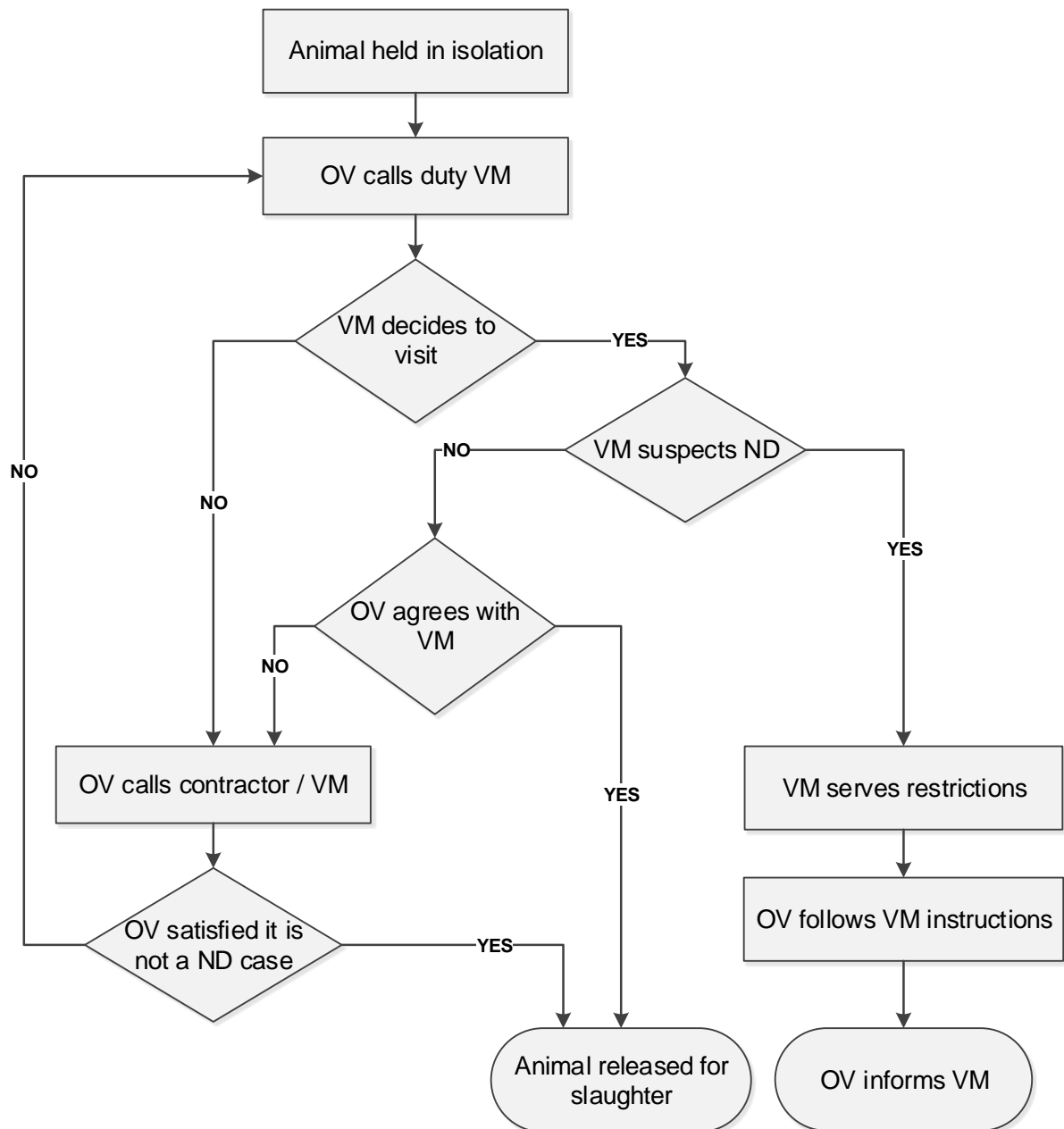
2.2.8 Legislative responsibilities

The OV remains responsible for:

- ensuring that all public health legislation is complied with while the establishment is under APHA restrictions
- monitoring hygiene and animal welfare
- following APHA instructions and informing them immediately if any of them cannot be implemented

2.2.9 Procedure for suspect notifiable disease

The chart below outlines the procedure to follow if the OV suspects a notifiable disease.



Note: * If the Duty VM agrees the possibility of a Notifiable Disease, the premises should be treated as contaminated, until proven otherwise. The FBO should:

- not bring more susceptible animals on to the premises
- not slaughter live suspect animals (so the VM can sample them)
- isolate suspect/ potentially contaminated carcasses

2.3 Responsibilities of APHA

2.3.1 Main duties

APHA has responsibility for:

- applying animal health disease control measures to minimise the spread of notifiable disease
- fully investigating the OV (or other FSS AO) report

2.3.2 VM investigation

A VM will visit the slaughterhouse to carry out an investigation. Other VMs may be sent to the farm of origin to undertake a simultaneous veterinary enquiry.

Once at the establishment, the VM will discuss the report with the OV/ MHI/ Food Business Operator (FBO) and examine the suspect animals/ carcasses/ offal. The VM may also consult with other VMs who may have gone to the farm of origin to gain a full clinical picture, and with APHA Veterinary Exotic Notifiable Diseases Unit.

2.3.3 After investigations

If the presence of notifiable disease cannot be ruled out, the VM will:

- serve a restriction notice closing establishments (or parts), or
- amend any restriction notice that has already been served, and / or
- collect whatever samples are necessary for diagnostic purposes

If the initial investigation began as a consultation case, it will now become a report case.

2.3.4 Restrictions

APHA may seek to limit the extent of the restrictions on the establishment. In many cases only one part of the establishment, such as chiller or freezer unit(s) containing the restricted meat, will remain under restrictions.

2.4 Other responsibilities

2.4.1 Compliance

All persons at the establishment, including FSS staff, must comply with any restrictions in any notices served on the establishment.

2.4.2 Local authority

The LA is responsible for taking enforcement action under disease control legislation.

2.5 Detained meat storage

2.5.1 Storage sites

Any meat detained at the slaughterhouse will be kept under control of the OV and APHA, and locked in a 'storage site'. Access to this storage site will be facilitated through the OV or VM. The FBO is responsible for the way the meat is stored, in compliance with (EC) 853/2004.

The storage site is likely to be kept under restrictions until the final results are known.

2.5.2 Preparation for storage

The FBO may discuss procedures for preparing the meat for storage with APHA and FSS.

2.5.3 Test results

Negative results take longer to reach completion. APHA will provide information on how long it could take before the results are known.

2.5.4 Public health

FSS are fully responsible for ensuring that public health legislation is complied with at all times the meat is at the establishment.

According to (EC) 854/2004, Annex I, Section II, Chapter V, Paragraph 1(e), meat is to be declared unfit for human consumption if it 'derives from animals affected by animal diseases for which animal health rules are laid down in the Union legislation listed in Annex I to Council Directive 2002/99/EC, except if it is obtained in conformity with the specific requirements provided for in that legislation, unless otherwise provided for in Section IV;' specifically Chapter IX - Specific Hazards

See also chapter 2.4 on 'Post-mortem inspection', section 2.

2.5.5 Clearance

Meat detained on suspicion of disease will usually be released once all the tests are negative. The OV must seek clearance from APHA and keep a written record before opening any sealed container.

2.6 Cleansing and disinfection

2.6.1 Requirement to C and D

When certain diseases cannot be ruled out, APHA may require the FBO to cleanse and disinfect (C and D) specified parts of their establishment. FBOs are responsible for doing this at their own expense. APHA may request FSS assistance in supervising the cleansing and disinfection of the establishment.

When carrying out C and D activities in the event of an outbreak (or during the investigation of a suspected outbreak) of a Notifiable Disease, FBOs are requested to use the relevant disinfectant as listed on the Defra website. See link:

disinfectants.defra.gov.uk/DisinfectantsExternal/Default.aspx?Module=ApprovalsList_SI

These C and D activities need to be documented by protocols where the FBO should describe how to C and D the relevant equipment, utensils and vehicles. This should at least be in line with the manufacturers' instructions for the chemical in use.

2.6.2 After C and D

The VM will be able to confirm when the operations can re-commence after the C and D – in some cases the establishment may have to be rested for a specified period. The aim will always be to allow resumption of operations as soon as possible.

3. Anthrax

3.1 Introduction

3.2 Investigation and diagnostic sampling

3.1 Introduction

3.1.1 Background

The OV (or MHI where applicable) may consider the possibility of anthrax in the course of normal duties. In reaching a decision, the OV must take into account factors such as history or clinical signs.

3.1.2 Anthrax: clinical and pathological signs

Anthrax should be suspected:

- if the cause of death, particularly sudden death, is unexplained
- if clinical signs at ante-mortem inspection indicate that the disease might be present, for example, high temperature, bloody diarrhoea or a discharge of dark tarry un-coagulated blood from the nose, mouth and anus
- if post-mortem evidence suggests that the animal might have been suffering from anthrax

Note: If the OV is suspicious of anthrax, the carcass should not be opened as this can result in the formation of highly resistant anthrax spores.

3.1.3 Suspect live animals

Suspect animals and animals in direct contact must be detained, isolated and reported to the APHA Duty VM immediately.

The VM will place restrictions upon the animal, but it will not be slaughtered. It may be treated in situ, but for as long as the animal shows signs of disease the restrictions will remain in place.

3.1.4 Suspect carcasses

In some cases, suspicion of disease will not be raised until the carcass has been opened. The whole of the suspect carcass, offal, hide and blood must be detained (including any parts already removed) and people kept away from the carcass, its parts and the area where the carcass is held.

All other carcasses and offal at the establishment should be detained pending completion of enquiries. No other animals should be allowed to enter the slaughter-hall until the results of the enquiry are known.

Holding pens should not be cleaned, and no other product or waste is allowed to leave the site until authorised by APHA staff.

3.1.5 Details to report

The OV (or MHI where applicable) must report suspect cases to the Duty VM immediately, giving details as instructed in section 2 of this chapter. The decision whether to take further action or not rests with the VM and it is the duty of the OV to report suspect cases for the decision to be made by APHA.

3.1.6 APHA action

The VM will inform that restrictions apply and will also arrange for an immediate enquiry to be carried out by a VM or Local Veterinary Inspector (LVI) authorised to undertake anthrax enquiries (Panel 1c).

If the OV is a designated LVI, the VM may instruct them to undertake the enquiry providing suitable facilities are available for testing.

LVI's can carry out anthrax enquiries only on receipt of VM's instructions. LVI's cannot carry out enquiries in anticipation of authorisation.

Note: It may be appropriate for a Panel 1c designated OV to have an arrangement with a local PVS where stain and access to a microscope is available.

3.1.7 Cleansing and disinfection

Holding pens should not be cleaned and no other product or waste is allowed to leave the site until authorised by APHA staff.

It is likely that APHA requires the FBO to carry out the cleansing and disinfection of any place on the Infected Place (IP) associated with any animal notified as a suspect case pending the veterinary inquiry. If the results of the veterinary inquiry are positive or inconclusive, the FBO will be required to carry out a more thorough cleansing and disinfection procedure.

3.2 Investigation and diagnostic sampling

3.2.1 Anthrax bacilli suspected: initial investigation

Under no circumstances must the OV attempt to collect and examine samples for anthrax without having informed the VM and being authorised to do so.

If the OV is authorised under Panel 1c and facilities are available, the VM may request him or her to make the initial investigation.

3.2.2 BSE testing

If a bovine animal is found dead in the lairage or dead on arrival and the OV suspect's anthrax, then the animal must be tested for anthrax before being despatched for BSE testing (where BSE testing is appropriate).

3.2.3 Suspect anthrax out of hours

If it is necessary for an examination for suspected anthrax to be carried out at a slaughterhouse outside normal OV hours of attendance, the VM will request a Defra vet on Panel 1c to attend the establishment to conduct such an examination. If the OV is Panel 1c accredited, the VM may ask them to do this.

3.2.4 Anthrax suspected

If disease is suspected, the Veterinary Inspector will report this to the VM who will make arrangements for the submission of samples for testing.

3.2.5 Detention of suspect carcasses

Where anthrax is suspected, the carcass should be detained until the results are received.

If the FBO so wishes, they may dispose of the carcass as Category 2 ABP.

3.2.6 Anthrax ruled out

Where the Veterinary Inspector is satisfied that anthrax does not exist in the live animal, they will notify the VM and FBO by completing form AN2 (Certificate – Non-existence of Disease in a Carcass).

Reference: See annex 3 on 'AN2 – Certificate' for a sample.

If the animal has died and requires TSE testing, the procedure for testing fallen stock must be followed once the presence of anthrax has been ruled out. If an owner requests an investigation into the cause of death, this is a private matter which must be arranged between the owner and veterinary surgeon.

4. Bovine Brucellosis

4.1 Overview

4.2 Slaughter and sampling

4.1 Overview

4.1.1 Introduction

The UK achieved official brucellosis free status in 1985. There are three measures in place to prevent the disease being re-introduced and subsequently spreading:

- post import testing of imported cattle
- compulsory reporting of all bovine abortions and premature calvings with investigation of all outside a specified low risk category
- quarterly testing of bulk milk samples from all dairy herds, including those of producer retailers

4.1.2 Responsibilities

APHA will inform the FSS about proposed slaughter of reactors. Collection and packaging of samples from brucellosis cases consigned for slaughter is the FSS responsibility, and will include:

- reactors and inconclusive reactors to the brucellosis tests, and
- contacts with confirmed cases

The despatch of the samples to the laboratory is the responsibility of APHA who will collect the samples from the slaughterhouse. **Note:** The OV must report any abortions and premature births to APHA and follow any additional instructions. All FSS staff should be aware of the potential danger of infection primarily from the uterus and udder.

4.1.3 Movement licences

Cattle from restricted premises will be consigned directly to slaughterhouses accompanied by a BS112 (Licence authorising the movement of cattle on to or off premises under restriction or authorising the movement of specified cattle which are under restriction awaiting the completion of tests for brucellosis). APHA will send a copy of the BS112 licence by fax, to the OV as advanced warning.

Reference: See annex 4 on 'BS112 – Licence' for a sample of the form.

In addition, where the owner has opted to slaughter the animal at their own expense (private slaughter) the animal will be accompanied by form BS15B. These are handed to the FBO on arrival.

Reference: See annex 5 on 'BS15B – Notice' for a sample of the form.

4.2 Slaughter and sampling

4.2.1 Slaughter procedure

The OV/MHI must collect the following samples from the carcass:

All animals
Paired lymph nodes <ul style="list-style-type: none">retropharyngeal (supra pharyngeal)supramammary (female) or superficial inguinal (male)internal iliac
In addition for bulls
<ul style="list-style-type: none">paired deep inguinal lymph nodespaired testicles, epididymes and seminal vesicles

4.2.2 Sampling packaging

Samples must be taken as cleanly as possible using sterilised knives, and placed in a labelled polythene bag (each pair of nodes or organs should be placed in a separate bag), which is then sealed. All specimens from each animal sampled should then be placed together in a further single outer polythene bag and this bag then sealed and labelled. Polythene bags should be self-sealable or tightly knotted and of sufficient strength to prevent leakage and potential cross-contamination.

4.2.3 Labelling

Label all sample bags with the ear tag number plus the details of any reactor tag.

4.2.4 Storage

All samples should be placed in a refrigerator (not freezer) until collected by APHA staff. FSS staff should inform APHA when the samples are ready for collection.

5. Enzootic Bovine Leukosis (EBL)

5.1 Introduction

5.2 Investigation of tumours in cattle carcasses or offal

5.3 Sampling of tumour carcasses

5.4 Packaging and despatch

5.1 Introduction

5.1.1 Enzootic Bovine Leukosis (EBL)

The OV must notify the APHA Duty VM of:

- any live animal affected with, or suspected of being affected with, EBL, and
- any carcase or offal showing certain tumorous changes

Detain any suspect live animal or any suspect carcase with its offal until the VM issues instructions. Retain the passport and Food Chain Information (FCI) until any investigations have been carried out.

5.1.2 Signs to report

The OV should report suspect cases in live animals or carcasses when there is evidence of tumours (other than papillomata or haemangiomas) or of swollen lymph nodes. Tumours in young animals normally arise from sporadic leukosis and not EBL; the latter being associated with tumours in animals aged three years or more.

Note: Swollen lymph glands identified in a live animal suffering from EBL will be painless.

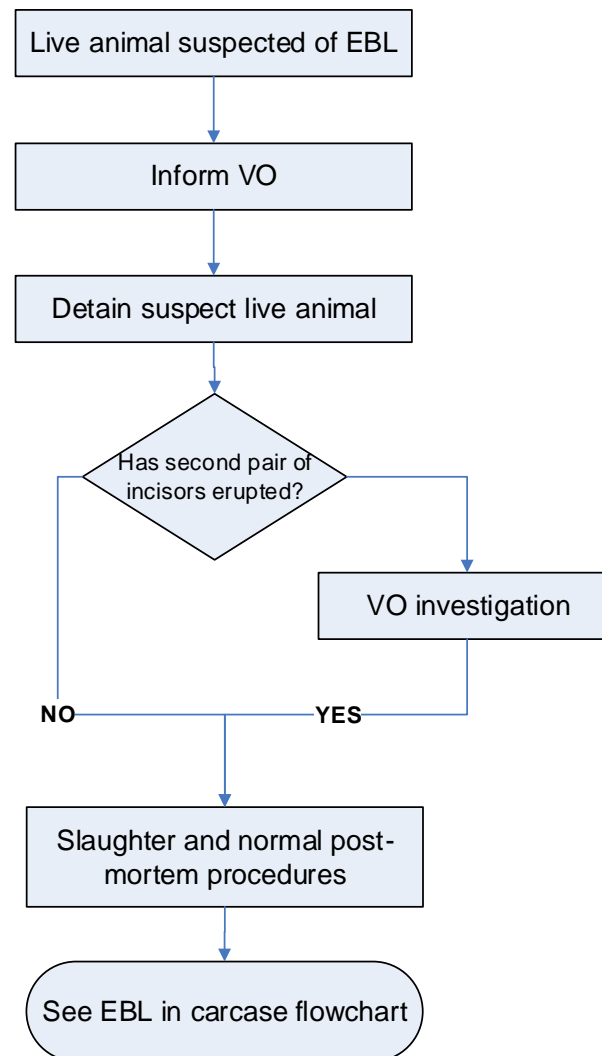
5.1.3 Documentation

Animals from establishments under movement restrictions because of EBL may be moved to slaughter under licence from APHA (Form EBL9).

Reference: See annex 6 on 'EBL9 – Licence' for a sample of the form.

Other animals licensed for slaughter from restricted establishments will not usually need to be inspected by a VM and the FSS should subject such carcasses and their offals to normal meat inspection procedures, paying particular attention for evidence of tumorous change.

Enzootic Bovine Leukosis (EBL): investigation of suspect live animal



5.1.4 Dentition check

Whenever suspect disease is reported in a live animal, the APHA Duty VM will ask whether either of the animal's second pair of permanent incisors has erupted – that is, whether there are more than two 'broad teeth'. If the answer is no, then in most cases no further action will be required other than the provision of outline data (APHA is required to keep a record of such cases for reporting to the EU), and the animal can be slaughtered and subjected to normal post-mortem inspection procedures and judgement.

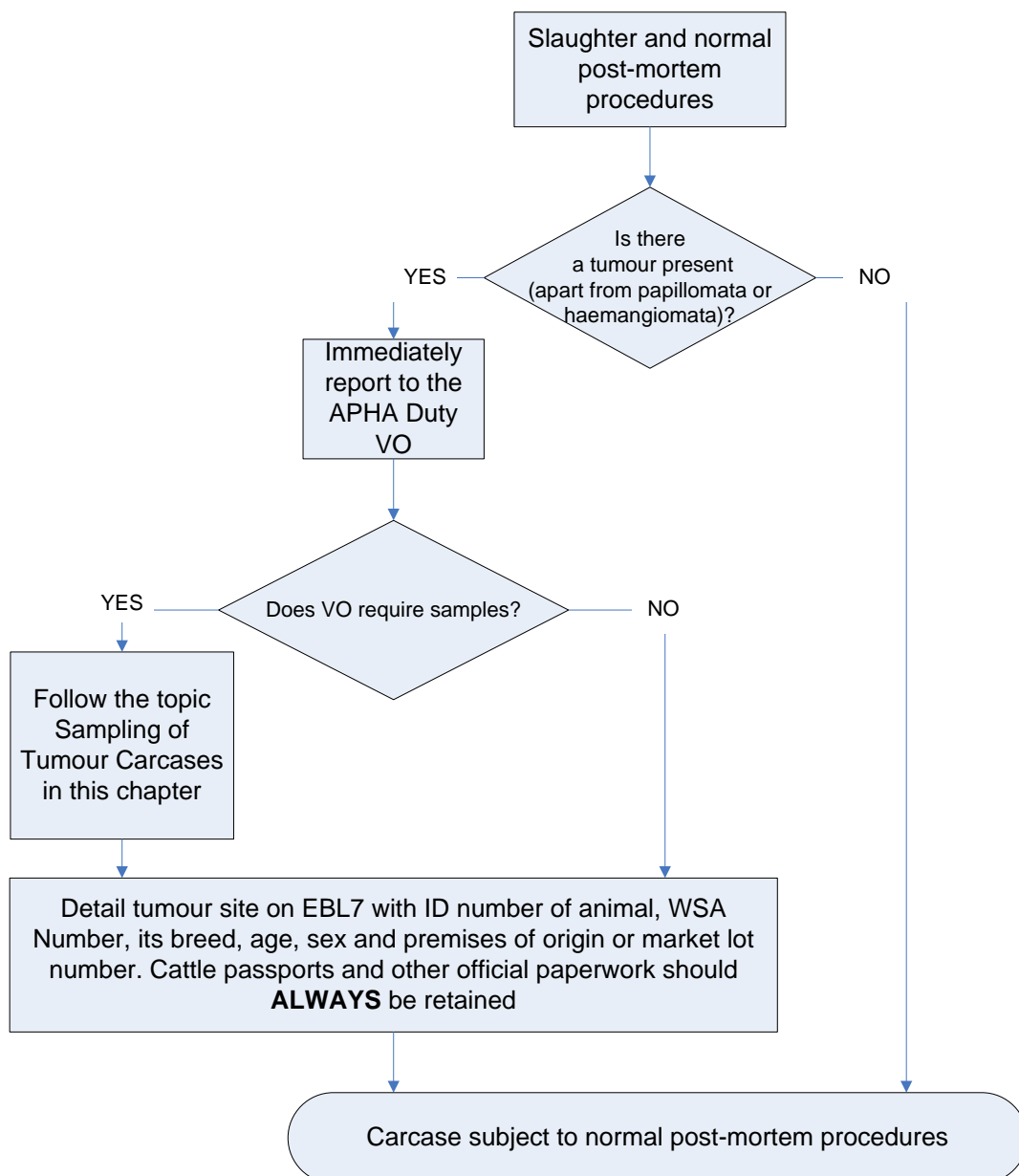
5.1.5 Three or more permanent incisors

If either of the second pair of permanent incisors has erupted (there are three or more 'broad teeth'), then APHA will instruct a VM to carry out an

investigation, and the OV must ensure the animal is detained in the lairage pending this investigation.

5.1.6 After the investigation

Following the completion of the VM investigation, the animal may be slaughtered and subjected to normal post-mortem inspection procedures and judgement. Appropriate samples of tumorous swollen lymph nodes should be taken from the carcass or offals at the request of the VM, where EBL has not been ruled out. The carcass and offal need not be detained pending the results of the tests on any collected samples. Enzootic Bovine Leukosis (EBL): process for sampling at post mortem inspection



5.2 Investigation of tumours in cattle carcasses or offal

5.2.1 Tumours in cattle

All cattle tumours seen at post-mortem inspection are notifiable, with the exception of papillomata or haemangiomas and should therefore be reported **IMMEDIATELY** to the APHA Duty VM, who will note the details of all cases and instruct when sampling by the FSS is to be carried out.

A large proportion of tumour notifications concern animals aged less than two years. Although collection of tumour specimens from cattle with fewer than three permanent incisors is not normally required, APHA retains discretion to require sampling or to instruct a VM to carry out an investigation.

5.2.2 Sampling of tumours

When asked to do so, the FSS is responsible for collecting the appropriate samples from carcasses and/ or offal and retaining these along with details of the tumour site and the FCI. Cattle passports and FCI should always be retained by the FSS to assist APHA in the process of tracing.

The FSS will arrange for collection of the samples and complete all relevant details on the EBL7 submission form. The FSS will prepare, pack and send the samples along with the completed submission forms to the laboratory.

FSS staff must positively differentiate between lesions which are tumorous (EBL) and those which are tuberculosis (TB) as different sampling and diagnostic testing is required.

The FSS will sample a tumorous carcass and/ or its offal, the following 2 sets of samples should be collected:

- tissue samples for Polymerase Chain Reaction Test (PCRT)
- tissue samples for histology

5.3 Sampling of tumour carcasses

5.3.1 Samples of PCRT

A PCRT has been developed to detect the presence of Bovine Leukosis Virus (BLV – the agent responsible for EBL infection) in cattle tissues and lymph nodes. The PCRT requires fresh refrigerated samples.

5.3.2 Samples of histology

Samples for histological analysis are also needed as a backup should the fresh samples prove unsatisfactory for PCRT. These samples should consist of a specimen from each of the grossly affected organs and representative enlarged lymph nodes.

5.3.3 Collection of samples

Follow the steps in the tables below to collect the samples.

Note: Remove samples within 24 hours of slaughter.

Sample for PCR test:

Step	Action
1	Use sterilised knives and gloves for each carcass
2	Take tissue sample from undisturbed part of tumour and from one accessible non-lesion lymph node of 5-10g
3	Transfer sample to individual sterile 60 ml pot
4	Write 'PCR Test', ear tag number, WSA number (provided by APHA) and organ tissue sampled on label and stick on pot
5	Store chilled until dispatch by courier

Sample for histology:

Step	Action
1	Take sample from affected organs and representative enlarged lymph nodes
2	Cut specimens about 1cm thick; a slice of organ should show both normal and diseased tissue
3	Lymph nodes should be transverse across the long axis of the node and should include the capsule
4	Transfer sample to individual sterile 60ml pot
5	Write 'Histo Test', ear tag number, case reference number and organ tissue sampled on label and stick on pot
6	Store chilled until dispatch by courier

5.3.4 Post-mortem inspection

Once the required samples have been removed, the carcass may be subjected to normal post-mortem inspection procedures and judgement – it need not be detained pending the results of the tests for EBL.

5.3.5 Recording of post-mortem findings

Details of the tumour site should be recorded on the form EBL7, together with all available identification information. Complete only those parts of the

form for which you have information; the remainder will be completed by APHA staff.

Reference: See annex 8 on 'EBL7 – Submission form' for a sample of the form.

5.3.6 Notifying FSS

The OV should notify the relevant VM by email of the following details of the sample:

- passport number of the sampled animal
- name of owner
- name of APHA office contacted
- date despatched via TopSpeed
- sample request should be entered into OWS "Sample Request" application

5.4 Packaging and despatch

5.4.1 Packing

1. All samples must be submitted in a 60ml pot.
 - Outside of pot must be kept clean.
 - Remember to tighten lids. Give an extra turn before packing.
 - Avoid cross threading the lids as they will cause the pots to leak.
2. Place each individual pot in a plastic bag which is knotted tightly. Trim off excess bag.
3. Place all bagged pots into a biobox/ biobottle along with the absorbent pad/ material and seal the box. The process for sending forms is as follows:
 - Signed original EBL7 forms must be placed in an envelope, this envelope should be marked 'Originals' and placed between the outer box and the biobox/ biobottle. APHA laboratory staff will forward the original forms internally to the relevant APHA regional office
 - Copies of the EBL7 forms should be placed in a ziplock bag and taped to the outside of the biobottle/ placed in biobox. Copies of these forms should be faxed or emailed to the relevant APHA office. The OV should retain a further copy in the plant files for future reference (retention period 12 months).
4. Place biobottle into the outer box.

5. Attach address label.
6. Attach security seal
7. Store the package in the chiller until the time of collection. Ideally place in a waterproof bag/ container to avoid contamination.

5.4.2 Despatch

The current courier for the new sampling process is Topspeed Couriers. The courier process is as follows:

As soon as you receive the sampling request information from APHA, book the courier online through www.topspeedcouriers.co.uk or email ebi@topspeedcouriers.co.uk with the following information:

- establishment name and approval number
- slaughter date of the samples (this information will allow Topspeed Couriers to plan the collections to include multiple pickups where possible)
- destination laboratory:

BLV – PCR Virology Department
APHA Weybridge
New Haw
Addlestone
Surrey
KT15 3NB

- name and telephone number for the FSS contact at the plant

On detection of a tumour that needs samples submitting, notify the courier that samples are required to be collected. The courier will organise a collection which meets the two working days delivery requirement (for example, a tumour found on Monday; samples are required to be with APHA by 5 pm Wednesday. However, collection could take place on Monday, Tuesday or Wednesday, as the couriers are required to consolidate their delivery runs to be cost effective.)

5.4.3 Ordering consumables

The OV at each abattoir is responsible for ensuring that there are sufficient supplies of consumables for packing samples. It is important that only the specified packaging materials (such as pots and labels) are used as failure to do so may result in the sample being un-assayable at the lab. The consumables must be ordered directly from APHA Weybridge by using the following procedure:

- Fill in the requisition form (annex 8a/b) specifying the type of materials required and the number of units.

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- Make sure that you complete all the boxes (establishment name, address, FSS contact name and telephone number, and any others).
- The requisition form should be emailed to StoresStockOrders@apha.gsi.gov.uk or faxed to APHA Weybridge: 01932 357497.
- APHA will endeavour to complete delivery of consumables orders within 7 working days of receipt. If you have any queries regarding an order that you have placed you should telephone the APHA stores in Weybridge on 01932 359451.

6. Transmissible spongiform encephalopathies (TSE)

- 6.1 TSE overview
- 6.2 Reporting suspicions
- 6.3 At visit: VM does not suspect TSE
- 6.4 At visit: VM suspects TSE

6.1 TSE overview

6.1.1 Introduction

This section outlines action to be taken when a TSE is suspected in an animal.

Instructions regarding sampling of animals when TSEs are not suspected can be found in the chapter 2.6 on 'Transmissible Spongiform Encephalopathy'.

6.1.2 Information about TSEs

Information about TSEs is carried on Defra's website:

www.gov.uk/government/collections/notifiable-diseases-in-animals

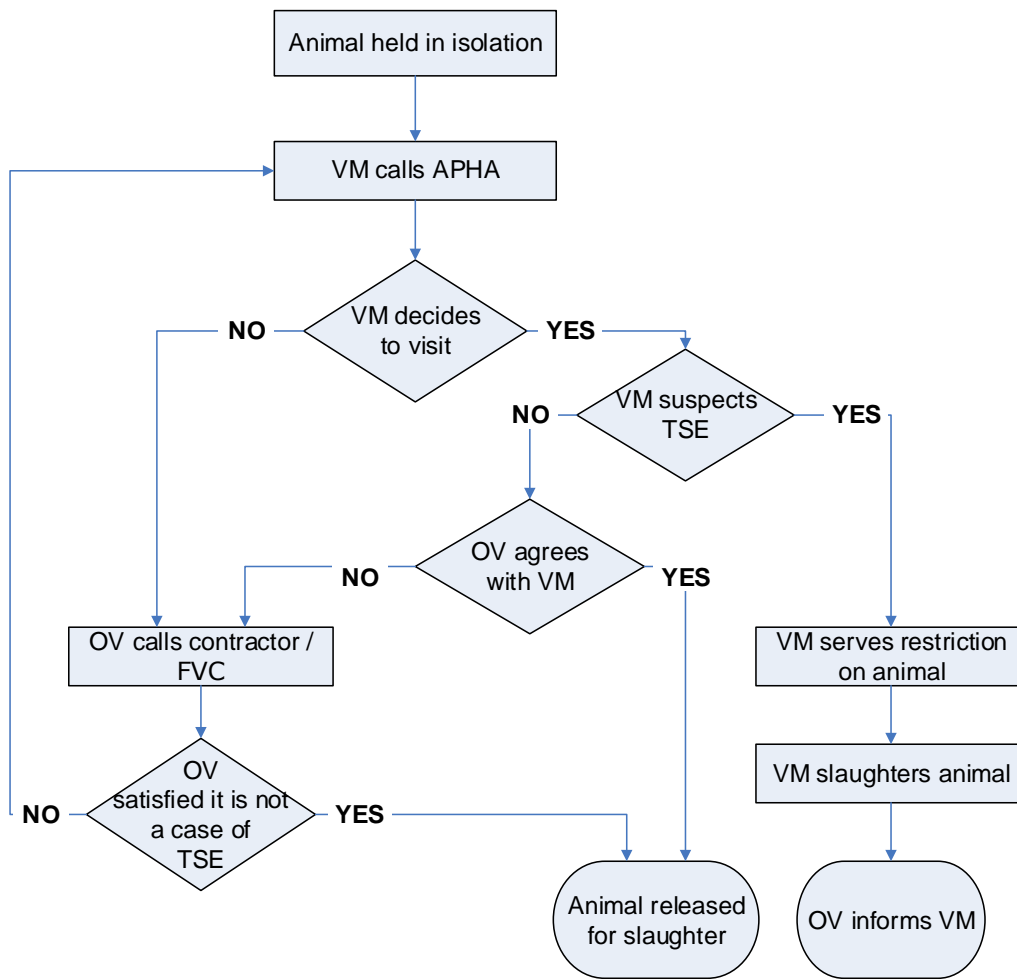
6.1.3 Reporting requirements

TSEs are notifiable diseases and their suspicion must be reported immediately to APHA.

6.1.4 Records

For all reported cases, the OV should ensure accurate details are recorded in the daybook.

6.1.5 Procedure



6.2 Reporting suspicions

6.2.1 Suspect live animals

If FSS or plant staff suspects that live cattle, sheep, goats or deer are affected with BSE, Scrapie or other TSE, they must take action as detailed in this topic.

Caution: The OV, especially in the case of BSE, should be aware that an affected animal may, because of behavioural changes associated with the disease, be likely to cause injury to itself, other livestock or staff.

Step	Action
1	Suspect animal is held in isolation in the lairage. On no account should a suspect animal be allowed to enter the main slaughter-hall unless and until the OV is satisfied that it should no longer be considered a suspect.
2	The OV telephones the APHA Duty VM to notify the suspicion of a

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	<p>TSE.</p> <p>There are two possible outcomes to the telephone conversation:</p> <ol style="list-style-type: none"> 1. The VM agrees with the OV's suspicions and agrees to visit the slaughterhouse 2. The VM disagrees with the OV and does not agree to visit the slaughterhouse. <p>If 1 occurs then the OV should follow Option 1 below.</p> <p>If 2 occur the OV should follow steps at Option 2 below.</p>
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Option 1: The table below details the action to take if the VM agrees with the OV suspicions.

Step	Action
1	<p>The Duty VM makes arrangements for a VM to visit the slaughterhouse as soon as possible to carry out an investigation.</p> <p>Defra may request the following details:</p> <ul style="list-style-type: none"> • clinical description of the animal • ear tag identification of the animal • date of birth of the animal • details of origin
2	The OV obtains FCI before the VM arrives
3	The FBO informs the owner of the animal
4	The VM examines the animal and determines whether it is clinically positive, negative or inconclusive for TSE

Option 2: The table below details the action to take if the VM does not agree with the OV's suspicions and does not agree to visit the slaughterhouse.

Step	Action
1	The OV must obtain further advice from their VM
2	The OV should discuss the case and decide whether or not the animal is still a TSE suspect.
3	If after discussion the OV still suspects a TSE, they give formal notification to the Duty VM, and the Duty VM must then send a VM out to examine the animal.

6.3 At visit: VM does not suspect TSE

6.3.1 Suspect not confirmed by VM

There are two possible outcomes to the VMs visit and decision that the suspect is not suffering from TSE:

Outcome 1: the OV agrees with the VMs decision

Outcome 2: the OV does not agree with the VMs decision.

6.3.2 Outcome 1

If the VM considers that the suspect is not affected by BSE, Scrapie or other TSE, provided that the OV is in agreement with the VMs decision and an alternative diagnosis does not preclude it, the animal may be submitted for slaughter for human consumption.

Note: Certain bovine animals which are not considered to be BSE suspects require TSE testing.

6.3.3 Outcome 2

If the OV is not in agreement with the VMs conclusion, the OV should contact their VM

The OV should discuss the case and decide whether or not the animal should still be considered a TSE suspect. If after discussion the OV still suspects a TSE, they give formal notification to the VM.

6.4 At visit: VM suspects TSE

6.4.1 Restrictions on animals

If the VM considers the case to be clinically positive, they will serve restrictions on the animal. Once restricted, the FBO must not allow the animal to be slaughtered.

6.4.2 Slaughter and destruction

The VM will slaughter the animal by injection of barbiturate and arrange for the dead animal to be transported either to an incineration plant or a veterinary laboratory where the head will be sampled.

In the case of sheep or goats, if the suspect animal is considered fit to travel, the VM may make arrangements to transport it live under licence to the nearest available veterinary laboratory.

6.4.3 Restrictions on premises

No restrictions will be imposed on the slaughterhouse premises in the case of a TSE suspect, although the VM may give advice on cleaning and disinfection in clinically positive cases.

6.4.4 Informing FSS Operations

The OV should inform FSS Operations that a TSE suspect animal has been killed at or removed from an approved establishment by Defra staff.

7. Tuberculosis (TB)

- 7.1 Introduction
- 7.2 Slaughter
- 7.3 Reactor animals
- 7.4 Reactor animals: notifications and responsibilities
- 7.5 Reactor animals: inspection requirements
- 7.6 Reactor animals: post-mortem decision
- 7.7 Reactor animals: sampling
- 7.8 Reactor tag sampling
- 7.9 The slaughterhouse case
- 7.10 The slaughterhouse case: additional detailed inspection
- 7.11 The slaughterhouse case: sampling
- 7.12 Packing and despatch of samples

7.1 Introduction

7.1.1 Introduction

Bovine tuberculosis (bTB) is an infectious and contagious disease of cattle and one of the biggest challenges for the cattle farming industry. It is caused by the bacterium *Mycobacterium bovis* (*M. bovis*), which can also infect and cause TB in many other mammals.

APHA is responsible for the control of TB in farms. The FSS, through a service level agreement, deals with sampling of tuberculin tested animals at APHA's request and suspect TB lesions identified at slaughterhouses.

If TB is suspected in the carcase of any bovine, deer or farmed mammal, APHA must be notified immediately.

Regulation: The Tuberculosis (Scotland) Orders (as amended).

Note: Health and safety procedures must be adhered to when handling suspect TB lesions. See FSS's health and safety manual at: http://fss/health_and_safety/SitePages/Home.aspx

7.1.2 Definitions

TB reactor plants are red meat slaughterhouses where animals that have undergone a tuberculin test are sent for slaughter. Slaughterhouses access this status through a contract with APHA.

Depending on the result of the tuberculin test, animals can be classed as reactors (R), inconclusive reactors (IR) and direct contacts (DCs). These animals can be compulsorily (R and DC) or Voluntarily (IR) slaughtered.

Restricted premises are those farms where APHA has established cattle movement restrictions.

A full list of the movement licences for these animals and the relevant TB forms is given in the Annex list (Annex 9 to 21)

7.1.3 Timesheet coding

All work undertaken by the FSS on behalf of APHA (such as additional inspection requirements, Reactor tag checking, collection and submission of samples and record keeping) must be recorded in OWS.

7.1.4 Scope of the instructions

This section details instructions to FSS staff for dealing with reactors and other cattle from restricted premises, including:

- forms accompanying animals from restricted premises
- inspection of R, IRs and DCs
- death of R/IRs/DCs before reaching the slaughterhouse
- collection and submission of samples
- form completion
- carcasses and offal from cattle with suspicious lesions encountered in the course of normal production, also known as 'The Slaughterhouse Case'
- carcasses and offal from other species with suspicious TB lesions

The instructions apply to:

- R and DCs compulsorily slaughtered by APHA
- IRs Voluntarily slaughtered but for which APHA require samples, that is stock accompanied by a TB24 and where advance warning has been given

by APHA by means of entering information on TB110 (reactor abattoirs) or via SLA and Contract team (elsewhere), whether alive or dead

- cattle and any other mammals that have been slaughtered in the course of normal production, where lesions consistent with TB are found during post-mortem inspection, also known as slaughterhouse cases

They do not apply to other cattle from TB restricted herds.

Note: The OV must be aware that animals with clinical tuberculosis must not be slaughtered for human consumption.

Regulation: (EC) 854/2004 Annex I, Section II, Chapter III, 4.

7.2 Slaughter

7.2.1 Where or when to slaughter

Where animals have reacted positively or inconclusively to the tuberculin test, or there are other grounds for suspecting infection, they are to be slaughtered separately, taking precautions to avoid the risk of contamination of other carcasses, the slaughter line and staff present in the slaughterhouse.

This applies to:

- cattle that require a TB24 movement licence and have been entered on a TB110 by APHA
- cattle that have a TB24 marked 'Inconclusive Reactor'
- deer that require a TB24a movement licence and APHA has advised of intended slaughter by means of a TB55a form
- sheep or other mammals that were tuberculin tested

It does not apply to animals moved under any other licences, or with a TB24 where the animal is not included on a TB110.

To reduce cross-contamination, the slaughter line must be cleansed and disinfected after processing reactor cattle, IRs and DCs. All such cattle should be slaughtered in one of the following situations:

- last in the day, before full cleaning and disinfection of the slaughter line
- at any other time provided that the slaughter line is cleaned and disinfected before the slaughter of non-suspect animals resumes
- in a separate slaughter-hall used for diseased animals or those suspected of being diseased

Reference: Regulation (EC) 854/2004, Annex I, Section IV, Chapter IX, E1.

Any species with TB suspect lesions found during the course of post mortem inspection, particularly where there are no suitable facilities for detailed inspection and sampling in the dressing line, should immediately be placed in the detained area.

7.2.2 Transfer of carcasses and offal to the detained facilities

When transferring offal/ carcasses to a detained area for further inspection or sampling, care must be taken to prevent cross-contamination of other meat/ equipment/ fittings in the slaughter-hall. In the event of suspected contamination, cleansing and disinfection of the affected area/ equipment must take place before production recommences.

Note: Failure by the plant operator to co-operate with this procedure would constitute a contravention of the operator's responsibility to prevent cross-contamination and must be dealt with accordingly.

Regulation: (EC) 854/2004 Annex I, Section IV, Chapter IX, E.

7.3 Reactor animals

7.3.1 Types of animals

The table below shows the animals that may be despatched from TB-restricted premises.

Consigned to slaughter	By	Examples
Compulsorily	APHA	Test reactors, DCs
Voluntarily	Herd owner	Fat stock, surplus calves, culled cows, and reactors / IRs which the herd owner chooses to slaughter

7.3.2 Forms

In addition to the official identification documents and the Food Chain Information, animals from TB-restricted establishments may also be accompanied by one or more of the following forms:

- Emergency Slaughter Certificate
- TB24, TB24b, TB24g, TB16b, TB24a, TB55a

- electronic notification by APHA via a TB110 sent to the OV by noon the day before the kill

Reference: See annexes 9 to 14 for sample movement licences and FCI forms.

7.3.3 Food chain information

All animals sent for slaughter must be provided with Food chain information (FCI).

Since some TB restricted animals are compulsorily slaughtered, the OV should verify that withdrawal periods have been observed for veterinary medicines and other treatments administered to the animals, this includes substances used for diagnosis purposes such as tuberculin.

Keepers submitting cattle from a farm with movement restrictions due to tuberculosis must declare this as part of the FCI. **APHA requires all cattle moving for slaughter from TB-restricted herds to be marked with an orange stripe along the back.** This is irrespective of test results so applies to animals moving under general licence as well as with movement licences.

The OV must be present on site during the processing of animals from a TB restricted farm.

Reference: 854/2004, Annex I, Section III, Chapter II, 3(b)

7.3.4 TB110 electronic TB sampling and submission form

APHA will submit electronically a TB110 form providing details of the reactor and DC cattle sent for compulsory slaughter and the sampling code that applies to each herd. This code determines the level of sampling that is required.

Note: These animals will only be sent to selected slaughterhouses contracted by APHA for processing TB suspect cattle. Contact the Operations@fss.scot for the current list of those slaughterhouses and the associated APHA TB diagnostic laboratory.

A number of IRs may be voluntarily slaughtered by the owner. The owner can choose any abattoir to slaughter them, but similar arrangements to those above apply.

APHA will e-mail a TB110 to the OV and other agreed FSS officers by noon the day before the kill date.

The TB110 must be completed after post-mortem inspection, recording the findings. The process for sending the forms is as follows:

- signed hard copy TB110 must be placed in an envelope, this envelope should be marked 'Originals' and placed between the outer box and the biobox/ biobottle; APHA laboratory staff will forward the signed hard copies internally to the relevant APHA regional office
- copies of the form should be placed in a ziplock bag and taped to the outside of the biobottle/ placed in biobox; a copy of the forms should be faxed or emailed to the relevant APHA office; the OV should retain a further copy in the plant files for future reference (retention period 12 months)

Reference: See annex 15 on 'Sample: TB110 Reactor Sampling and submission form' for a sample of the form.

7.3.5 TB55a movement licences

Form TB55a is the proposal to slaughter deer. It will inform the OV of the arrival of deer from a restricted TB premises.

A copy of the TB55a will be sent by fax or email to the OV in advance.

Reference: See annex 19 on 'Sample: TB55a' for a sample copy of the form.

Regulation: See The Tuberculosis (Deer) Order 1989 (as amended).

Note: Reactor deer moved for slaughter under movement licence must have a broad arrow 15 cm long clipped on the left hind quarter.

7.3.6 TB24 movement licences

Form TB24 is a movement licence issued by APHA authorising transport of cattle (reactors, IRs, DCs and any cattle from TB restricted herds that have not been tested for TB) to a slaughterhouse. It must accompany animals during transport. Most animals accompanied by a TB24 need to be slaughtered separately, and if they appear on the TB110, inspected in detail.

Some cattle that are not reactors or DCs may travel to slaughter under a TB24. These cattle do not in principle have a higher risk of infection with tuberculosis than other cattle from restricted herds. These may be cattle that have not been tested for TB and animals that have had an inconclusive response to the skin test.

Since the EC regulations require that animals that have reacted inconclusively to the tuberculin are to be slaughtered separately, APHA will mark the TB24 of these animals with the words 'Inconclusive Reactor'.

When animals that should have arrived with a TB24 are found not to have one, this should be reported to APHA and the relevant Trading Standards department.

Reference: See topic 7.2.1 on 'Where or when to slaughter' onwards in section 7.

Reference: See annex 9 on 'Sample: TB24'.

7.3.7 TB24a movement licences

Form 24a is a licence issued by APHA authorising movement of deer to a slaughterhouse. It must be given to the FSS representative on arrival to the slaughterhouse.

A copy of the TB24a will be sent by fax or email to the OV in advance.

Note: For welfare reasons the deer should be slaughtered within 3 hours of arrival at the slaughterhouse and shall not be removed alive.

Reference: See annex 18 on 'Sample: TB24a' for a sample copy of the form.

7.3.8 TB24b/g movement licences

Form TB24b is a movement licence issued by APHA authorising transport of cattle, listed by ear tag, from TB restricted herds to a slaughterhouse via an approved collection centre/ slaughter market.

Form TB24g is a licence authorising movement of cattle from approved finishing units under restrictions to a licensed slaughterhouse.

Animals eligible for a TB24b/g are not considered reactors, IRs or DCs. They need only be subject to normal inspection procedures.

Reference: See annex 12 on 'TB24b' for a sample copy of the form and annex 13 on 'Sample TB24g' for a sample copy of the form.

7.3.9 TB24c movement licences

Most clear testing cattle and calves under 8 weeks of age travelling direct to slaughter from holdings under TB restrictions, no longer require a specific TB24/ TB24b licence. These animals can be consigned to slaughter by their owners under the terms of a general movement licence (TB24c), issued by the APHA at the time the herd is placed under restrictions.

Herd owners who are granted a general TB24c licence will not be required to forward a copy to the slaughterhouse, nor will it be necessary for a copy of the general TB24c licence to travel with the animals.

These animals, as with all cattle from a TB restricted herd, should be identified by means of an orange stripe along the back and FCI should indicate the herd is under restriction, but they will be subject to the normal inspection procedures.

General TB24c licences will automatically expire on lifting of TB restrictions. APHA retains the power to rescind a general movement licence at any time.

Reference: See annex 10 on 'Sample: TB24c' for a sample copy of the form.

7.3.10 Exclusions from general licence (TB24c)

Reactors, IRs, DCs and any untested cattle aged 8 weeks or more are explicitly excluded from the general licence and will continue to be licensed to slaughter by APHA, under a specific TB24 travelling with the animal.

Animals may arrive at the slaughterhouse accompanied by TB24s prior to the OV receiving notification from APHA. In these circumstances, FSS staff should inform APHA of the arrival of such animals and wait for instructions.

7.3.11 TB16b movement licence

TB16b movement licences are issued to authorise movement of ear tag listed cattle from restricted premises to Approved Finishing Units, Approved Quarantine Unit or to a slaughterhouse through a Dedicated Sale for TB Restricted Cattle. These animals have passed a tuberculin test in the 90 days before movement and are not reactors, IR or DC. The licences should accompany the animals to the abattoir but, as with animals moved under a TB24b/g, they need only be subject to normal post-mortem inspection procedures.

Reference: See annex 11 on 'Sample: TB16b' for a sample copy of the form.

7.3.12 FSS copy of licences

The person transporting the animals, on arrival at the slaughterhouse, must give a copy of the TB24, TB24b, the TB24g, TB16b, TB24a or the TB55a licences to the FSS representative.

The table below shows which forms, licences and certificates accompany which animals to the slaughterhouse.

Form/ licence	Reactors	DCs	IRs	Cattle not tested for TB	Clear-testing cattle and calves under 8 weeks	On-farm slaughter
FCI	✓	✓	✓	✓	✓	✓
TB110	✓	✓	✓			✓
TB24	✓	✓	✓	✓	may happen	
TB24b					✓	
TB24c					✓	
TB24g				✓	✓	
TB16b					✓	
TB24a (deer)	✓	✓	✓			
TB55a (deer only)	✓					

7.3.13 Irregularities

APHA will contact the OV if, after submission of the TB110, there is any change to the number of cattle sent for slaughter or to the sampling code.

Note: in some cases fewer cattle may be delivered than expected, but never more than pre-arranged.

If the OV believes that animals from a TB restricted establishment have been presented for slaughter without all the necessary documentation, they should inform APHA and the LA.

APHA should also be contacted if, due to missing paperwork, conflicting information, or any other circumstances, the OV is not sure if an animal from a TB restricted establishment requires detailed post-mortem examination and sampling.

7.4 Reactor animals: notification and responsibilities

7.4.1 Overview of responsibilities

Type	Responsibility	Duty
Reactors, IRs and DCs	APHA	<ul style="list-style-type: none"> Inform FBO and FSS in advance of the date and number of animals delivered for slaughter. Electronic submission of spreadsheet for each batch of animals for recording of post-mortem findings (TB110) Allocation and communication of sample code that applies to each batch. Issue licences (TB24, TB24a). <p>Provide Work Schedule Activity (WSA) and reactor tagging information.</p>
	FSS	<ul style="list-style-type: none"> Detailed inspection of carcass and offal from reactors. Collection of tissue samples as determined by the batch sampling code ensuring traceability during the inspection and sampling process. Packing and despatch of all samples to the assigned APHA TB diagnostic laboratory. Completion of electronic documentation, including the details of lesions in a way that facilitates tracing them back to the herd of origin and sign paperwork accompanying the samples to the lab. <p>Order of consumables (such as labels, pots and bags)</p>

7.5 Reactor animals: inspection requirements

7.5.1 Additional detailed inspection

A detailed inspection must be carried out on animals included in the following categories:

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- Reactor or direct contact cattle compulsorily purchased and slaughtered by APHA at contracted slaughterhouses (These animals must arrive at the slaughterhouse with FCI advising they originate from a restricted herd, a movement licence (TB24), and be listed on the TB110).
- Reactors or IR cattle voluntarily slaughtered for which APHA require samples (these will be accompanied by the same documents as above but they may be sent to any slaughterhouse). When samples are required for animals in this category, APHA will inform the SLA, who will in turn forward the information to the FSS staff at the selected slaughterhouse.
- Deer compulsorily purchased and slaughtered by APHA.

In the case of reactor animals the following lymph nodes (LN) and organs must be examined in detail (visual inspection, palpation and incision) if they have not been examined already:

Routine inspection	Additional requirements
Retropharyngeal LN*	Prescapular LN
Parotid LN	Superficial inguinal LN
Submandibular/ Submaxillary LN	
Bronchial* and Mediastinal* LN	
Lungs*	
Pleura	
Hepatic LN	
Liver	
Mesenteric LN (representative sample)	
Supramammary LN	
Udder**	

* Tissues where tuberculosis lesions are most commonly found

** See subtopic below

Note: Additional examinations of any other lymph nodes, such as those enlarged and/ or haemorrhagic, may take place whenever considered necessary.

Regulation: (EC) 854/2004, Annex I, Section I, Chapter II, D, 2 (b) (i).

7.5.2 Udder inspection

The inspection of udders from reactor cattle is particularly important as they are not routinely incised unless they are for human consumption. In addition

to the visual inspection and incision of the supra-mammary lymph nodes, the udder of cows must be visually inspected and palpated. If abnormalities are found during these, or when the udder is intended for human consumption, then deep incisions must be done into each quarter of the udder as far as the lactiferous sinuses.

Regulation: (EC) 854/2004, Annex I, Section IV, Chapter I, B 11.

7.5.3 Incision method

Cuts into the lymph nodes should be made across the node in at least two directions (criss-cross pattern) to reveal as much as possible of the core of the node. Care should be taken to examine the tips of the node. This method will reveal most TB lesions or reveal an area which appears abnormal which can be further incised.

Lesions in the lungs, liver and udder are most commonly found on inspection or palpation. Where abnormalities are felt on palpation the abnormal areas should be incised for further investigation. Careful small incisions at the border of the lesions should be made to reduce exposure to infective material. If the lesion is found to be typical of TB, no further incision is required into that lesion.

7.5.4 Hygiene precautions

Any equipment used to incise or examine the lymph nodes must be cleansed and sterilised before undertaking post-mortem procedures on subsequent carcasses.

7.6 Reactor animals: post-mortem decision

7.6.1 Judgement of meat

Decision on whether meat is fit for human consumption is based on the findings during post-mortem inspection.

Where there are indications of generalised TB or TB lesions with emaciation the entire carcass and all the blood and offal should be rejected as unfit for human consumption.

All meat from animals in which post-mortem inspection has revealed localised tuberculosis in a number of organs or a number of areas of the carcass are to be declared unfit for human consumption. However, when a TB lesion has been found in the lymph nodes of only one organ or part of the carcass, only the affected organ or part of the carcass and the associated lymph nodes need to be declared unfit for human consumption.

Regulation: (EC) 854/2004, Annex I, Section IV, Chapter IX, E.

7.7 Reactor animals: sampling

7.7.1 Relevant animals

In general, the collection of diagnostic samples by the FSS is limited to reactors, DCs compulsorily slaughtered and some reactors or IRs which has been voluntarily slaughtered (cattle entered on a TB110 as requiring detailed post-mortem inspection).

In the rare but possible occurrence when reactors arrive to a non-contracted plant (considering that farmers do have the option of refusing valuation and private slaughter), APHA will issue a TB110 and advice on the sampling protocol. These animals cannot be considered/ treated as slaughterhouse cases.

7.7.2 Responsibility for collecting samples

APHA, before sending animals to the abattoir, will provide the OV with the details of likely numbers and sampling protocol 48 hours in advance and will then submit electronically to the OV a copy of the TB110 (see annex 15) by noon the day before the kill date. The form will include:

- the number of animals to be sent from each holding
- the reason for submission (reactor, IR, DC)
- the sampling code for each batch

Once the required samples have been collected the carcasses and offal can be released if they have been found fit for human consumption.

7.7.3 Death of reactors/ DC/ IR on arrival or in lairage

In the event of a Reactor being found dead on arrival (DOA), or dead in the lairage (DIL), the OV must contact APHA and explain the circumstances. APHA will inform the OV if any diagnostic samples for TB are to be collected.

Reference: The OV must be aware of the requirement to test for TSEs in over 48/ over 24 month DOA or DIL bovines as per instructions in chapter 2.6 on 'TSE Testing' and also consider the possibility of anthrax.

7.7.4 Sampling codes

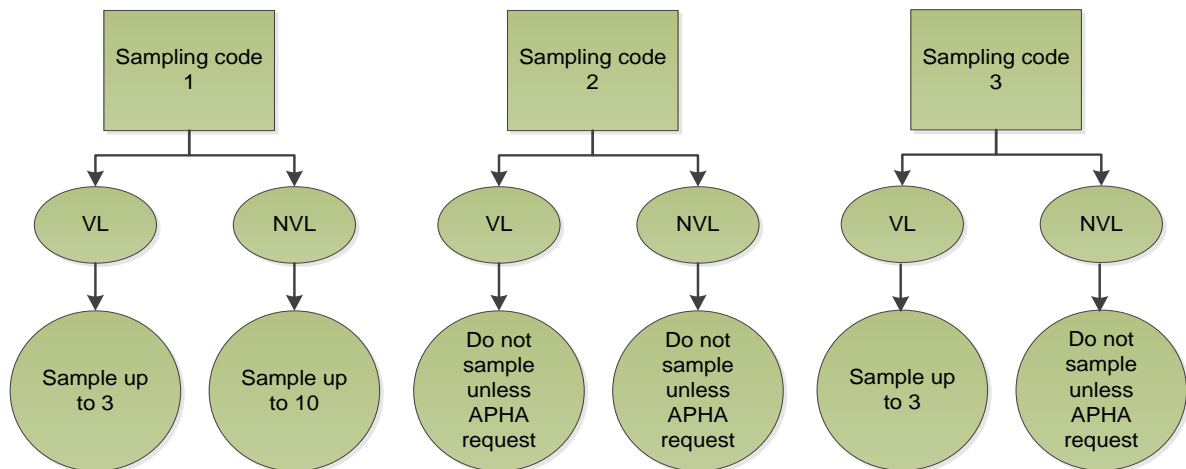
APHA will request a sampling protocol for suspect animals from each farm using three sampling codes (SC1, SC2 and SC3). The sampling codes are allocated by APHA depending on the herd history and its current status. In

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in addition, APHA will indicate whether additional or exceptional sampling is required.

Sampling code 1		Sampling code 2		Sampling code 3
Visible lesions (VL)	No visible lesions (NVL)	Visible lesions (VL)	No visible lesions (NVL)	Visible lesions (VL)
Collect samples from maximum of 3 VL animals per herd. No NVL samples required	Submit samples from 10 animals per herd (or from all if less than 10 animals)*	Do not collect samples unless APHA request	Do not collect samples unless APHA request	Collect samples from maximum of 3 VL animals per herd

***APHA will indicate which 10 need to be sampled where all are NVL and more than 10 cattle are submitted from each farm**



7.7.5 Sampling code 1: typical lesions identified (VL)

All lesions typical of TB should be collected when required (sampling code 1 or sampling code 2 with specific request from APHA).

A typical lesion is where infection with *M bovis* is suspected and common colours (cream/ yellow) and common consistency (caseous/ calcified/ purulent) is identified.

APHA has defined a visible lesion (VL) as a lesion that is visible to the naked eye and typical of infection with *M bovis*.

Lesions due to skin TB should not be collected and will not be classed as VL.

All the lesions from each carcass should be pooled and placed in a single sealed 60 ml plastic pot to give one submission per animal. The samples should be two-thirds of the pot and should include the lesion plus some normal tissue from the border of the lesion, where possible. However, this may result in a large amount of tissue if a carcass presents multiple TB lesions. In this situation, sample only the two most characteristic lesions; however, if the lesion in its entirety does not fill two-thirds of the pot, please include comments to that effect in the relevant comments box of the form.

Note: Unaffected lymph nodes must never be submitted when typical TB lesions have already been found in the same carcass.

7.7.6 Sampling code 1: typical lesions not identified (NVL)

Non-visible lesions are those where no lesions typical of infection with *M bovis* are visible to the naked eye.

While this is not part of the APHA definition of NVL, for practical purposes this includes both where no lesions are found and where there are lesions that can be seen but infection with *M bovis* has been ruled out.

Where no lesions are found it is necessary to collect samples from all the following lymph nodes:

- all bronchial and mediastinal lymph nodes
- paired retropharyngeal lymph nodes
- any other lymph node if enlarged, abnormal and / or haemorrhagic

7.7.7 Sampling code 1: atypical lesions identified

An atypical lesion is a lesion where infection cannot be definitely attributed to *M bovis* and where common colours (cream/ yellow) or common consistency (caseous/ calcified/ purulent) are not identified, but where infection with *M bovis* cannot be ruled out.

Please note that an atypical lesion is neither a VL nor NVL for reporting purposes.

If both typical and atypical lesions are found on the same carcass, submit samples from the typical lesion only. The only exception to this is when suspect udder/ supra-mammary lesions are found; these should be submitted in addition to the typical lesion and in a separate pot (one per holding).

Where only atypical lesions are found, sample a pool of lymph nodes and record as NVL but also collect and send the atypical lesion in a separate pot. Ask for urgent histology and laboratory fast track of this sample.

This should only be used where a decision cannot be made and the possibility of infection with TB cannot be ruled out.

7.7.8 Sampling code 2

Where APHA has allocated a sampling code 2 to a batch of animals there is no need to collect any samples, with only two exceptions:

- APHA may specifically request samples in certain cases.
- Where atypical lesions are found and there are no typical lesions in any animal from the same herd, sample the atypical lesion only and send for urgent histology/ culture, making remarks to that effect on the 'specific information' section of the TB110.

7.7.9 Method

Each animal from which samples are needed must be individually sampled. Samples from more than one animal must never be pooled in the same pot. Care must be taken to prevent cross-contamination.

The following method should be used to collect samples for TB diagnosis.

Stage	Description	
1	Collect samples cleanly to limit contamination. Ensure the equipment used for inspection and sampling of carcasses is disinfected between carcasses to prevent the possibility of cross-contamination.	
2	Dissect samples free of surrounding tissues to limit the Volumes of tissue submitted. Samples should be as fat and muscle free as possible.	
3	Where the carcase had visible lesions (VL) or non-visible lesions (NVL) samples are to be treated as follows:	
	VL	NVL
	Remove suspicious node or lesion in its entirety if small or a sample the size of 2/3 of a pot if large and pool up to two of the lesions from the same area of the carcase in a pot. If the lesion in its entirety does not fill 2/3 of the pot please include comments to that effect in the relevant comments box of the form.	Pool lymph nodes collected from the same carcase and place in a pot. The 60 ml pot should be 2/3 full. If there are any atypical lesions, collect separately from pool.

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Stage	Description
4a	Mesenteric chain lymph nodes should only be collected when no other lesions are present. They must not be included in the pooled sample and must be collected separately from other lymph nodes from the same carcase. This is to minimise contamination of the pooled sample with bacteria that could inhibit the growth of <i>M. bovis</i> in the laboratory.
4b	Suspicious lesions in the supramammary nodes should always be submitted from any carcase (max. 1 per CPH). As for mesenteric nodes they should not be included in any pool of samples they need to be submitted in a separate pot.
5	The OV must be present in the slaughter-hall during the post-mortem inspection to ensure that the correlation is maintained and that findings are accurately recorded for each carcase. The OV must also ensure that the samples are secured prior to despatch.
6	<p>APHA requires complete and accurate records of all findings from each animal, including those from which no samples have been taken, in the electronic form (TB110). This information will be used in deciding the future management of the herd. The completed form must be e-mailed to APHA (at the email address from which the TB110 originated) before despatch of samples (by 3pm if samples sent to the lab on the same day, or by noon next day when the samples are despatched the following day). If samples are collected, the TB110 must also be emailed to the APHA laboratory: (TBDiagnosticTeam@apha.gsi.gov.uk).</p> <p>A hard copy of the TB110 must be signed by the OV and should be faxed or emailed without delay to the relevant APHA office. The signed hard copy must be placed in an envelope, this envelope should be marked 'Originals' and placed between the outer box and the biobox/ biobottle. APHA laboratory staff will forward the signed hard copies internally to the relevant APHA regional office.</p> <p>A copy of the form should be placed in a ziplock bag and taped to the outside of the biobottle/ placed in biobox. The OV should retain a further copy in the plant files for future reference.</p>
7	Each sample pot must have a unique traceability label stuck on the outside of the pot. The outside of the pot must be kept clean and the lids must be tightly closed to prevent leakage. In the event of the pot getting wet, it must be dried to ensure that the traceability label can be affixed when the sample is placed inside the pot. To maintain traceability, pots must be labelled before being moved from the slaughter-hall. Each pot must then be placed inside a bag which is knotted tightly and excess bag trimmed off.

Stage	Description
8	If more than one pot is submitted for a single animal (pool in one pot and atypical lesion in a separate pot) place all the individual sample pots, each in its own bag.
9	All bagged pots must then be placed in a biobox or biobottle (depending on number of pots) which is sealed. A copy of the completed forms must then be placed in a ziplock bag which is taped to the outside of the biobox.
10	Further packaging (box/ bag) is then applied in line with courier instructions (see topic 7.12 on 'Packing and despatch of samples').
11	Retain chilled, pending their collection by a courier for transfer to the APHA laboratory. They must not be frozen unless instructed to do so by APHA. If frozen the sample and the packaging must be marked: 'frozen sample'.

7.7.10 Sampling code 3

Where APHA has allocated a sampling code 3 to a batch of animals, only VL samples need to be taken up to a maximum of 3 animals per specific holding.

Check the 'specific information' column of the TB 110 form because in some cases only 1 or 2 samples per holding may be required by APHA.

Ensure that at least 2/3 of the pot is full when collecting the sample.

NVL lesions do not need to be submitted with this sampling code.

7.7.11 Completion of sampling and submission from (TB110)

The TB110 has two parts.

- The first will be completed by APHA with details of the holding, CPH number, ear tags, any other relevant information and the sampling code that applies to each batch.
- The second part must be completed by the FSS and be signed by the OV. The findings in each carcass, including those for which samples are not required, must be recorded using codes to identify the lymph nodes/tissues and the description of the lesions where applicable (see below).

Where lesions are found in the lungs and/ or udder suggestive of possible discharge of bacilli to the exterior (open tuberculosis) this has epidemiological importance and should be recorded in the comments box of the TB110.

The form must be sent electronically on completion to the originating email address and a hard copy, signed by the OV, must also be faxed or emailed

The TB110 must also be sent electronically to the APHA laboratory (TBDiagnosticTeam@apha.gsi.gov.uk) and a signed hard copy must accompany the samples.

7.7.12 Completion of TB 50

The TB50 form is used to record post-mortem findings on suspect TB carcasses in all species (see section 7.9 on 'The slaughterhouse case').

Note: There is no need to complete TB50 forms for reactors slaughtered at APHA contracted abattoirs as the post-mortem findings are collated on the TB110.

Reference: See annex 16 on 'Sample: TB50' for a copy of the form.

7.7.13 Codes used to complete the TB forms

Codes will be used to describe the lesions, with six criteria used: location, number, size, colour, consistency/ texture and presentation.

1. **Location:** Retropharyngeal (RP); Parotid (PA); Submandibular/ Submaxillary (SM); Bronchial and Mediastinal (BM); Lungs (Lu); Pleura (PI); Hepatic (HEP); Liver (Li); Prescapular (PSc); Superficial Inguinal (SI); Mesenteric (MES); Supramammary (SMA); Udder (U); Other (O)
2. **Number:**
 - Single (S) – a distinct single lesion in the lymph node/ organ
 - Multiple (M) – up to 6 distinct lesions in the lymph node/ organ
 - Diffuse (D) – multiple lesions throughout the lymph node/ organ that may or may not coalesce
3. **Size:** <2mm – (1); 2-10mm – (2); 11-50mm-(3); >50mm- (4)
4. **Colour:** Cream (C); Yellow (Y); White (W); Other (O)
5. **Consistency/ texture:** Caseous (Ca); Calcified (Cf); Purulent (P); Granulomatous (Gr); Mixed [Ca and CF] or [Ca and P] (Mx)
6. **Presentation:** Typical (T); Atypical (A)

For a typical lesion if the description cannot be provided from the above options a description can be entered in the comments box.

Reference: a template for recording findings on the line during post-mortem inspection is available at annex 17 on 'Description of lesion template'.

Note: For packing and despatch of samples, please see topic 7.12 on 'Packing and despatch of samples' later in this section.

7.8 Reactor tag sampling

7.8.1 Overview

The aim of this programme is to compare the ears collected from TB reactors in order to audit fraudulent procedures in relation to reactor removal. This will be audited by cross matching 2 tissue samples:

- tissue collected in the DNA capsule when tagging TB reactors at the time of the TB test
- tissue taken from the ear of TB reactors at the point of slaughter

The Reactor Ear testing programme will comprise of 3 elements:

- Targeted collection where FSS have identified at point of slaughter possible tampering with tags, either official or reactor tags, or missing reactor tags.
- Targeted collection where APHA identify a risk and request FSS to collect both whole ears (which do not have to be connected), from specifically identified animals.

Random collection of the required number of ears selected by FSS at each slaughterhouse on a monthly basis.

7.8.2 Notification to slaughter house/ FSS of reactor details

Animals submitted for slaughter for TB control will either be R or DCs and will be sent for slaughter in one of the following ways:

- submitted as part of haulage and salvage to one of the slaughterhouses contracted by APHA to process TB reactors
- private slaughter organised by the owner but moved under licence issued by APHA

DCs will not have reactor tags and are excluded from this programme, however any other suspicion of fraud should be investigated as described in the MOC.

Most TB reactors will have a reactor tag applied. However, there are a few exceptions to that rule where reactors may not be tagged and are considered ineligible categories:

- reactors identified following re-interpretation (standard to severe) after PM / culture results
- animals have not been tagged at Tuberculin Test 2 (animal reading) for operational reasons
- gamma positive reactors

The assumption is therefore that apart from those ineligible for this programme all reactors disclosed at a skin test and entering the slaughterhouse will be marked with a reactor tag. In the comments box of the TB110, the following reasons will be given to indicate that an animal will not have a reactor tag and is ineligible:

- 'tag not applied' where APHA are aware that an animal has not been tagged for any reason
- 're-interpretation' where an animal became a reactor after the skin test due to re-interpretation of the skin measurements
- 'gamma' where an animal has failed the gamma interferon test

7.8.3 Action when animal arrives at slaughterhouse

Apart from those specifically requested by APHA, the level of reactor animal identity checking by FSS should be as per existing instructions in the MOC.

Where FSS undertake an identity check, the following details should be compared with the information submitted to them by APHA:

- ear tags match the cattle passport
- reactor tag present if not reported as 'tag not applied' or one of the categories not eligible for tagging (re-interpretations or gammas)

The following action should be taken:

- record findings, on ID checklist or FBO sheets where applicable
- check if any evidence of tampering or other fraud
- if evidence found, notify LA Trading Standards as per existing processes and retain relevant part of the animal

7.8.4 When is an ear sample required?

The reactor tag scheme requires a sample (comprising both whole ears and all tags present in those ears) to be collected from any animal which comply with one of the criteria described below.

A sample will be required in the following circumstances unless otherwise instructed. The FSS Targeted and the APHA Targeted may be required in slaughterhouses in Scotland

- **FSS targeted** – Whenever a FSS officer finds evidence of fraud, the tag has been tampered with or other ID non-compliance.
 - For example, reactor tag missing when expected to be present (TB110 will state if 'not applied' or one of the other ineligible categories), ear tags tampered with, indecipherable documentation, animal does not

appear to match that expected (age, breed, sex). Guidance is being produced, that gives details of what constitutes ear tag tampering.

- **APHA targeted** - When requested by APHA, Intelligence led targeted examination of animal ID and sampling.
 - APHA will state 'COLLECT EARS' in the TB110 comments box when ears are required to be collected.

In exceptional cases APHA may contact the FSS representative at a slaughterhouse (by phone) to request an urgent identify check and request ear samples to be taken.

For all other animals, that is TB reactors that have not had a reactor tag applied or Direct Contacts, any suspicion of fraud should be investigated as described in the chapter 6 on 'Notifiable diseases', section 7.

7.8.5 Collection of sample, packing and despatch of ear samples from FSS


For continuity of evidence all processes should be completed by the same person (removal of the ears, completion of sample submission form, labelling and bagging in tamperproof/ evidence bag and packaging of samples packed for dispatch).

The following protocol should be followed:

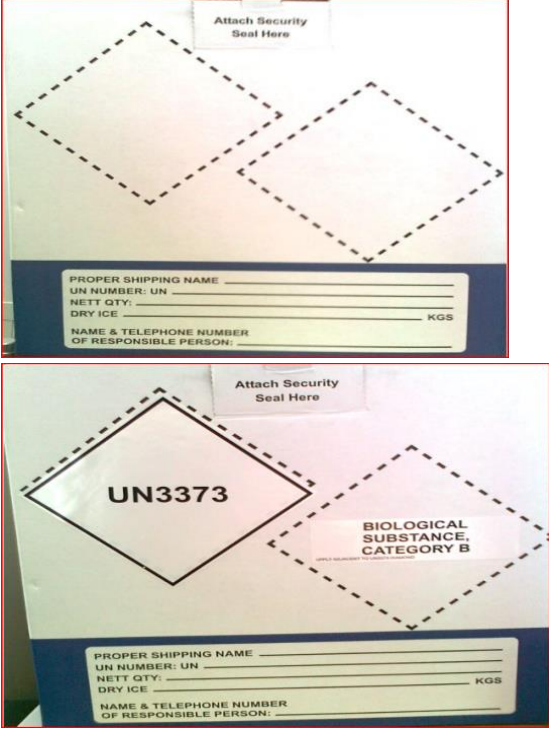
A. Preparation of packing systems:

Step	Action
1	The packing materials consist of the following: <ul style="list-style-type: none"> • Biotherm boxes (system 5, 10 or 15, depending on number of samples collected) • Grip seal bags (8" x 11") • Absorbent pads • Tamperproof/ evidence bag • Ice Brix (2 per box)
2	Biotherm 5 boxes have been issued for routine sampling and only one pair of ears should be packed in this system. In the event multiple sample collection is required (targeted sampling) the Biotherm 10 and 15 systems should be used and will be supplied by APHA.
3	All Biotherm systems will be supplied by APHA and need to be prepared for first initial use; once preparation has been completed, using the protocol below, the systems can be re-used and will be returned by APHA.

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	<p>Net Qty: One sample</p> <p>Dry Ice: less than 1 kilogram.</p> <p>Name and telephone number of responsible person: FSS contact name and number</p> <p>Ice Brix must be 'hard' frozen before use, x2 Ice Brix should be sufficient for the Biotherm 5 system.</p>
4	<p>On the lid of the box complete legibly and accurately.</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>a) Consignee details with:</p> <p>APHA TB DNA Testing Food Standards Scotland Sample New Addlestone Surrey KT15 3NB</p> <p>b) Consignor details with:</p> <p>Full Address of the abattoir Postcode Reception Area Haw</p>
5	Open the box and remove the labels supplied, place to one side.
6	On the front panel stick the UN3373 label in one of the pre-marked diamonds and place the Biological Substance Category B label adjacent to the UN3373 diamond (see photographs).

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7	Discard the Infectious Substance label; this must not be used.																		
8	<p>Complete legibly and accurately the front panel:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Proper shipping name:</td> <td style="width: 25%;">Biological</td> <td style="width: 25%;">Substance</td> </tr> <tr> <td></td> <td></td> <td>Category B</td> </tr> <tr> <td>UN Number:</td> <td colspan="2">UN3373</td> </tr> <tr> <td>Net Qty:</td> <td colspan="2">One sample</td> </tr> <tr> <td>Dry Ice:</td> <td colspan="2">less than 1 kilogram.</td> </tr> <tr> <td>Name and telephone number of responsible person:</td> <td colspan="2">FSS contact name and number</td> </tr> </table> <p>Ice Brix must be 'hard' frozen before use, x2 Ice Brix should be sufficient for the Biotherm 5 system.</p>	Proper shipping name:	Biological	Substance			Category B	UN Number:	UN3373		Net Qty:	One sample		Dry Ice:	less than 1 kilogram.		Name and telephone number of responsible person:	FSS contact name and number	
Proper shipping name:	Biological	Substance																	
		Category B																	
UN Number:	UN3373																		
Net Qty:	One sample																		
Dry Ice:	less than 1 kilogram.																		
Name and telephone number of responsible person:	FSS contact name and number																		

B. Notify APHA that ear samples have been taken:

Step	Action
1	Whenever ear samples are taken, FSS abattoir staff must notify APHA Central Tagging Team that a sample has been taken and submitted to APHA Lab at Weybridge.
2	<p>A copy of the signed sample submission form (annex 22 on 'Material for DNA analysis') should be faxed or scanned and emailed to the APHA central tagging team at:</p> <p>Fax: 01905 768649</p> <p>Email: AHspecialistservicecentreworchester@apha.gsi.gov.uk</p>

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C. Collection and preparation of ears (x1 pair):

Step	Action
1	Place the pair of ears (from the same animal) into a grip seal bag (8" x 11"); remove any excess air from the bag and seal.
2	Place the bagged sample (x1 pair of ears) inside another grip seal bag (8" x 11"), add an absorbent pad, and remove excess air and seal.
3	Place the 'double bagged' sample (x1 pair of ears) into the tamperproof/ evidence bag and seal to meet continuity of evidence requirements.
4	Complete legibly and accurately the tamperproof/ evidence bag in the section marked ' FSS Use Only '.
5	Put in the refrigerator or freezer for chilling. This will reduce excessive moisture collecting in the bag.
6	Complete the sample submission form legibly and accurately. If samples have been taken due to evidence of tampering, ensure the tampering suspected box is ticked on the sample submissions form.
7	Send a copy by fax to APHA Central Tagging Team (as above at B step 2) and place in a grip seal bag (8" x 11") remove excess air and seal.
8	Add the hard frozen Ice Brix to the Biotherm system and place the sample next to the Ice Brix (x2 Ice Brix per biotherm system).
9	Place the sample submission form on top of the sample (inside a plastic bag), close the polystyrene lid (expanded polystyrene), close outer flaps and seal with security label or brown tape. Where samples from more than one animal are in the box, ensure the bag containing the sample submission form is attached to the corresponding tamperproof bag.
10	As soon as you receive the sampling request information from APHA, book the samples collection by the courier online at http://www.topspeedcouriers.co.uk/ or with the following information: <ul style="list-style-type: none"> • establishment name and approval number • date for each kill day and whether samples are likely to be sent from that day (will depend on whether any are sample code 1); this information will allow Topspeed Couriers to plan the collections to include multiple pickups where possible • destination laboratory • name and telephone number for the FSS contact at the plant

D. Preparation of biotherm replacement of outer box:

Step	Action																					
1	<p>If the outer carton becomes damaged a replacement carton should be obtained and prepared for use, using the protocol below:</p> <p>N.B. A replacement outer carton is not supplied with UN3373 label and this will need to be obtained when ordering replacement carton</p> <ul style="list-style-type: none"> • Assemble the flat pack box • On the front panel stick the UN3373 label in one of the pre-marked diamonds • Write in permanent black marker pen, <u>in letters at least 6mm high</u> and adjacent to the UN3373 label <p>‘BIOLOGICAL SUBSTANCE CATEGORY B’</p>																					
2	<p>Complete legibly and accurately the front panel:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">Proper shipping name:</td> <td style="width: 25%;">Biological</td> <td style="width: 25%;">Substance</td> </tr> <tr> <td></td> <td></td> <td>Category B</td> </tr> <tr> <td>UN Number:</td> <td colspan="2">UN3373</td> </tr> <tr> <td>Net Qty:</td> <td colspan="2">One Sample</td> </tr> <tr> <td>Dry Ice:</td> <td colspan="2">less than 1 kilogram.</td> </tr> <tr> <td>Name</td> <td style="text-align: center;">and</td> <td>telephone</td> </tr> <tr> <td>number of responsible person:</td> <td>FSS contact</td> <td>name and number</td> </tr> </table>	Proper shipping name:	Biological	Substance			Category B	UN Number:	UN3373		Net Qty:	One Sample		Dry Ice:	less than 1 kilogram.		Name	and	telephone	number of responsible person:	FSS contact	name and number
Proper shipping name:	Biological	Substance																				
		Category B																				
UN Number:	UN3373																					
Net Qty:	One Sample																					
Dry Ice:	less than 1 kilogram.																					
Name	and	telephone																				
number of responsible person:	FSS contact	name and number																				
3	Insert the polystyrene box																					
4	Ice Brix must be ‘hard’ frozen before use, x2 Ice Brix should be sufficient for the Biotherm 5 system.																					
5	Follow Collection and Preparation of Ears (x1 pair) protocol																					
6	Resupply of packaging and dispatch equipment should be ordered by completing and submitting the CS115 form (annex 21)																					

7.9 The slaughterhouse case

7.9.1 Definition

Carcases and offal with suspicious TB lesions found during routine meat inspection are called ‘slaughterhouse cases’. The animals may or may not have come from a TB restricted premises.

7.9.2 Responsibilities

The table below outlines the responsibilities.

Slaughterhouse cases	APHA	<ul style="list-style-type: none"> • Advise and authorise whether samples are required and provide batch number (Work Schedule Activity – WSA) • Requesting and authorising the submission of suspected tissue samples
	FSS	<ul style="list-style-type: none"> • Reporting of cases found during post-mortem inspection where TB is suspected to APHA • Additional detailed inspection of the carcasses and offal, • Collection of samples, packing, completion of paperwork and submission of samples (when authorised) to the APHA TB diagnostic laboratory as per instructions • Ensuring traceability of samples during the inspection, collection and despatch of samples • Order consumables (such as labels and pots)

7.9.3 Skin tuberculosis

Animals presenting skin lesions only should not be treated as a slaughterhouse case, surveillance is not required and samples do not need to be collected. *M bovis* is rarely isolated from skin lesions.

7.9.4 Differentiate between lesions

Because different sampling and diagnostic testing is required in each situation, FSS staff must positively differentiate between lesions which are:

- tuberculosis (TB) Action – Inform APHA and collect samples for analysis
- tumorous (EBL) Action – **Reference:** See section 5 on ‘Enzootic Bovine Leukosis’ for additional information

7.9.5 Notifying APHA

Where the OV cannot positively rule out TB as the possible cause of the lesion(s) the suspect case must be reported to APHA without delay. The OV must inform APHA by telephone, to allow trace back to the farm of origin, giving details of the case such as:

- the nature of lesions found with their location

- the name and address of the person submitting the animal with ear tag number, lot number, CPH number and kill number in the additional remarks box of the TB50
- a description of the animal
- when the sample can be despatched

The details need to be recorded in a TB50, signed by the OV, and faxed to the local APHA office so that they can make a decision as to whether samples must be sent to the laboratory.

The OV must retain legible copies of the animal's identification (for example, cattle passport); kill sheet, FCI and other records that can be necessary for future investigations.

Regulation: The Tuberculosis (Scotland) Order (as amended).

7.9.6 APHA action

On notification from the FSS of the finding of suspect TB lesions, APHA must provide the sample Work Schedule Activity (WSA) ID number that must be recorded in the box at the top of the TB50 form. Once they have received the completed TB 50 form APHA will advise whether samples should be submitted for culture and of any special conditions. Where required, samples must be collected and submitted to the APHA laboratory for analysis.

7.9.7 Movement to detained area

After dressing, carcasses and offal suspected of being affected with tuberculosis should be placed immediately in the detained area before additional detailed inspection is carried out and before being sampled, if required by APHA.

7.9.8 Transfer of carcasses and offal

When transferring offal/ carcasses to a detained area for further inspection or sampling, care must be taken to prevent cross-contamination of other meat/ equipment/ fittings in the slaughter-hall. In the event of suspected contamination, cleansing and disinfection of the affected area/ equipment must take place before production recommences.

Note: Failure by the plant operator to co-operate with this procedure would constitute a contravention of the operator's responsibility to prevent cross-contamination and must be dealt with accordingly.

Regulation: (EC) 854/2004 Annex I, Section IV, Chapter IX, E.

7.10 The slaughterhouse case: additional detailed inspection

7.10.1 Detailed inspection

In the case of animals in which there are grounds for suspecting TB the following lymph nodes (LN) and organs must be examined in detail (visual inspection, palpation and incision) if they have not been examined already:

Routine inspection	Additional requirements
Retropharyngeal LN*	Prescapular LN
Parotid LN	Superficial inguinal LN
Submandibular/ Submaxillary LN	
Bronchial* and Mediastinal* LN	
Lungs*	
Pleura	
Hepatic LN	
Liver	
Mesenteric LN (representative sample)	
Supramammary LN	
Udder**	

* Tissues where tuberculosis lesions are most commonly found

** See subtopic below

Note: Additional examinations of any other lymph nodes, such as those enlarged and/ or haemorrhagic, may take place whenever considered necessary.

Regulation: (EC) 854/2004, Annex I, Section I, Chapter II, D, 2 (b) (i).

7.10.2 Udder inspection

The inspection of udders in 'slaughterhouse case' is particularly important as they are not routinely incised unless they are for human consumption. In addition to the visual inspection and incision of the supra-mammary lymph nodes, the udder of cows must be visually inspected and palpated. If abnormalities are found during these, or when the udder is intended for human consumption, then deep incisions must be done into each quarter of the udder as far as the lactiferous sinuses.

Regulation: (EC) 854/2004, Annex I, Section IV, Chapter I, B 11.

7.10.3 Incision method

Cuts into the lymph nodes should be made across the node in at least two directions (criss-cross pattern) to reveal as much as possible of the core of the node. Care should be taken to examine the tips of the node. This method will reveal most TB lesions or reveal an area which appears abnormal which can be further incised.

Lesions in the lungs, liver and udder are most commonly found on inspection or palpation. Where abnormalities are felt on palpation the abnormal areas should be incised for further investigation. Careful small incisions at the border of the lesions should be made to reduce exposure to infective material. If the lesion is found to be typical of TB, no further incision is required into that lesion.

7.10.4 Hygiene precautions

Any equipment used to incise or examine the lymph nodes must be cleansed and sterilised before undertaking post-mortem procedures on subsequent carcasses.

7.10.5 Correlation of TB suspect carcasses and offal

The OV at any red meat slaughterhouse, where a TB suspect carcass and offal might be identified, will prepare a protocol to ensure the proper identification and correlation of TB suspect carcasses and offal. The protocol will be tailored to each plant so that any issues related to identifying and correlating the TB suspect carcass and offal are addressed. It must state that 'each TB suspect carcass and offal is identified by a detained grey tag'.

The detained grey tags will be ordered by the Operations Manager (OM) from the Admin Team in FSS Aberdeen (adminteam@fss.scot) to ensure that each red meat slaughterhouse holds a stock of these tags on the premises.

7.10.6 Judgement of meat

Decision on whether meat is fit for human consumption is based on the findings during post-mortem inspection.

Where there are indications of generalised TB or TB lesions with emaciation. The entire carcass and all the blood and offal should be rejected as unfit for human consumption.

All meat from animals in which post-mortem inspection has revealed localised tuberculosis in a number of organs or a number of areas of the

carcase are to be declared unfit for human consumption. However, when a TB lesion has been found in the lymph nodes of only one organ or part of the carcase, only the affected organ or part of the carcase and the associated lymph nodes need to be declared unfit for human consumption.

Regulation: (EC) 854/2004, Annex I, Section IV, Chapter IX, E.

7.11 The slaughterhouse case: sampling

7.11.1 Collection of samples

When visible lesions found during post-mortem inspection cause suspicion of tuberculosis, samples need to be collected and may need to be sent for analysis, if requested and authorised by APHA. The sampling procedures are the same as previously described for reactors, where VL is found and Sampling Code 1 applies. Please note that NVL samples are NOT to be sent for slaughterhouse cases.

Remove suspicious node or lesion in its entirety if small or a sample the size of two-thirds of the pot if large and pool up to two of the suspected lesion tissues from the same carcase. Samples may be held in a polythene bag until APHA confirm that they are needed.

If the size of the affected tissue and/or lesions from slaughterhouse cases is too small to make up two-thirds of the pot, then comments must be included on the TB50 form to that effect. If the lesion identified is small, but there are multiple lesions, the multiple lesions must be included to make up the maximum required volume, to enable part of it to be used for histological examination. However, mesenteric lymph node and supramammary / udder tissue are exceptions and should be submitted separately.

The above is required because, where histology cannot be carried out on a sample and the initial culture result is negative, the culture must be extended. Extending the culture period increases the costs for APHA and impacts on the farmer's business, as restrictions will remain in place on the farm during the extended culture period; this could be up to 10 weeks.

Samples are not required from clear testing cattle from TB restricted establishments (cattle arriving at the slaughterhouse without a TB24), unless lesions suggestive of TB are found during post-mortem inspection. In this case, the 'slaughterhouse case' procedures apply.

7.11.2 Completion of TB 50 form

In addition to the telephone report, fill in a separate sample submission form (TB50) for each slaughterhouse case detected. The OV must give a detailed description of the location and nature of the suspect lesions on the TB50, including comments where the sample is smaller than required for histological examination. A properly completed TB50 form (including the WSA number) will enable APHA to quickly trace back the slaughterhouse case to its herd of origin. Based on this information APHA will decide whether samples need to be sent to the laboratory and put in place the appropriate TB control measures.

In this type of scenario the OV is expected to either confirm the lesion as being characteristic of TB or, alternatively, be able to rule it out. If the OV has any doubts and/or difficulties are found when completing the TB50 form, the OV can contact APHA and discuss any concerns with the duty Veterinary Officer to obtain the necessary advice.

Reference: See annex 16 on for sample TB50 form.

7.11.3 Distribution of the TB 50 form

The properly completed and signed TB50 form must initially be faxed or emailed to the local APHA office as soon as possible.

If APHA require the samples to be submitted to the laboratory the process is as follows:

- signed hard copy original TB50 form must be placed in an envelope, this envelope should be marked 'Originals' and placed between the outer box and the biobox/ biobottle; APHA laboratory staff will forward the signed hard copies internally to the relevant APHA regional office
- a copy of the form should be placed in a ziplock bag and taped to the outside of the biobottle/ placed in biobox; copy of the forms should be faxed or emailed to the relevant APHA office

OV should retain a further copy in the plant files for future reference (retention period 12 months).

7.11.4 Packing and despatch of all TB samples

If APHA confirm that samples are required they must be transferred from the polythene bag(s) into pots.

Samples must be sent to the APHA laboratory with the forms. They should be sent as soon as possible and by the next working day at the latest.

If APHA advise that the samples do not need to be sent to the laboratory then they must be disposed of as ABP. These discarded samples are classed as category 2 ABP and can also be disposed of as category 1 ABP.

Reference: See topic 7.12 on 'Packing and despatch of samples' at the end of this section.

7.12 Packing and despatch of samples

7.12.1 Packing

1. All samples must be submitted in a 60ml pot.
 - Outside of pot must be kept clean.
 - Remember to tighten lids. Give an extra turn before packing.
 - Avid cross threading the lids as they will cause the pots to leak.
2. Stick label on outside of pot: ear tag/ CPH printed on label.
3. Place each individual pot in a plastic bag which is knotted tightly. Trim off excess bag.
4. If submitting more than one pot for a single animal (pool in one pot) atypical lesion in a separate pot.
 - Label each pot and write on label what is in each pot, for example, pool/ mesenteric.
 - Place each pot in a separate bag and tie as previously.
 - Place both bagged pots in a third bag and tie the bag.
 - Make note in comments section on the TB110 or TB50 detailing how many pots submitted and what is in each pot.
5. Place all bagged pots into a biobox/ biobottle along with the absorbent pad/ material and seal the box. The person introducing samples inside the biobox/ biobottle must wipe their hands with 70% ethanol wipes before introducing the samples. The outside of the biobox/ biobottle must also be wiped. The process for sending forms is as follows:
 - Signed hard copy TB110 and original TB50 forms must be placed in an envelope, this envelope should be marked 'Originals' and placed between the outer box and the biobox/ biobottle. APHA laboratory staff will forward the signed hard copies internally to the relevant APHA regional office.
 - Copies of those forms should be placed in a ziplock bag and taped to the outside of the biobottle/ placed in biobox. Copies of these forms

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should be faxed or emailed to the relevant APHA office. The OV should retain a further copy in the plant files for future reference. (Retention period 12 months)

6. Place biobottle into the outer box. Before use the biobox/ biobottle must be stored in a separate clean area to amid possible cross contamination.
7. Attach address label.
8. Attach security seal.

Store the package in the chiller until the time of collection. Ideally, place in a waterproof bag/ container to amid contamination. The outer box needs to clearly read: 'TB samples open only in CL3'. If the box has not been pre-stamped, please write or use the sticker provided.

Despatch: The current courier for the sampling process is Topspeed Couriers. The courier process is as follows:

Step	Action
1	<p>As soon as you receive the sampling request information from APHA, book a collection at http://www.topspeedcouriers.co.uk/ or email the APHA Preferred Courier (currently Topspeed Couriers at tb@topspeedcouriers.co.uk) with the following information:</p> <ul style="list-style-type: none"> • establishment name and approval number • destination laboratory • name and telephone number for the FSS contact at the plant. <p>The complete process is set out in Annex 23.</p>
2	<p>The APHA preferred courier will confirm the date that the samples will be collected. If samples need to be kept at the establishment overnight, please ensure that they are sealed in the packaging requested from APHA and store in a chiller or cold room.</p>
3	<p>The APHA preferred courier is required to deliver the samples within 2 working days. For example, if samples are taken on Tuesday, samples are required to be with APHA by 5pm on Thursday. Samples can be delivered up to 3pm only on a Friday.</p>
4	<p>On detection of a slaughterhouse case that needs samples submitting, notify the courier that samples are required to be collected and they will organise a collection which meets the 2 working days delivery requirement; for example, a SH case found on a Monday, samples are required to be with APHA laboratory by 5 pm Wednesday but collection could either take place on Monday, Tuesday or Wednesday, as the couriers are required to consolidate their delivery runs to be cost effective.</p>

TB sample collection requests should be also noted in OWS Sample Request application.

7.12.2 Ordering consumables

The OV at each abattoir is responsible for ensuring that there are sufficient supplies of consumables for packing samples. It is important that only the specified packaging materials (such as pots and labels) are used as failure to do so may result in the sample being un-assayable at the lab.

The consumables must be ordered directly from APHA Weybridge by using the following procedure:

1. Fill in the requisition form (annex 8a and 8b)
2. Make sure that you complete all the boxes (establishment name, address, FSS contact name and telephone number, and any others).
3. The requisition form should be emailed to: StoresStockOrders@apha.gsi.gov.uk or faxed to APHA Weybridge: 01932 357497.

APHA will endeavour to complete delivery of consumables orders within 7 working days of receipt. If you have any queries regarding an order that you have placed you should telephone the APHA stores in Weybridge on 01932 359451.

8. Warble Fly

8.1 Warble fly infestation

8.1 Warble fly infestation

8.1.1 Notification

If warble fly infestation is suspected in a live bovine animal/ carcase, the OV should determine the farm of origin and notify the VM.

8.1.2 Detection in live animal

If it is necessary to slaughter the animal before the arrival of the VM, the carcase and hide, along with the identifying ear tag should be detained for inspection by the VM. 7 ml vacutainer sample of clotted blood should be collected at slaughter.

8.1.3 Detection in carcase

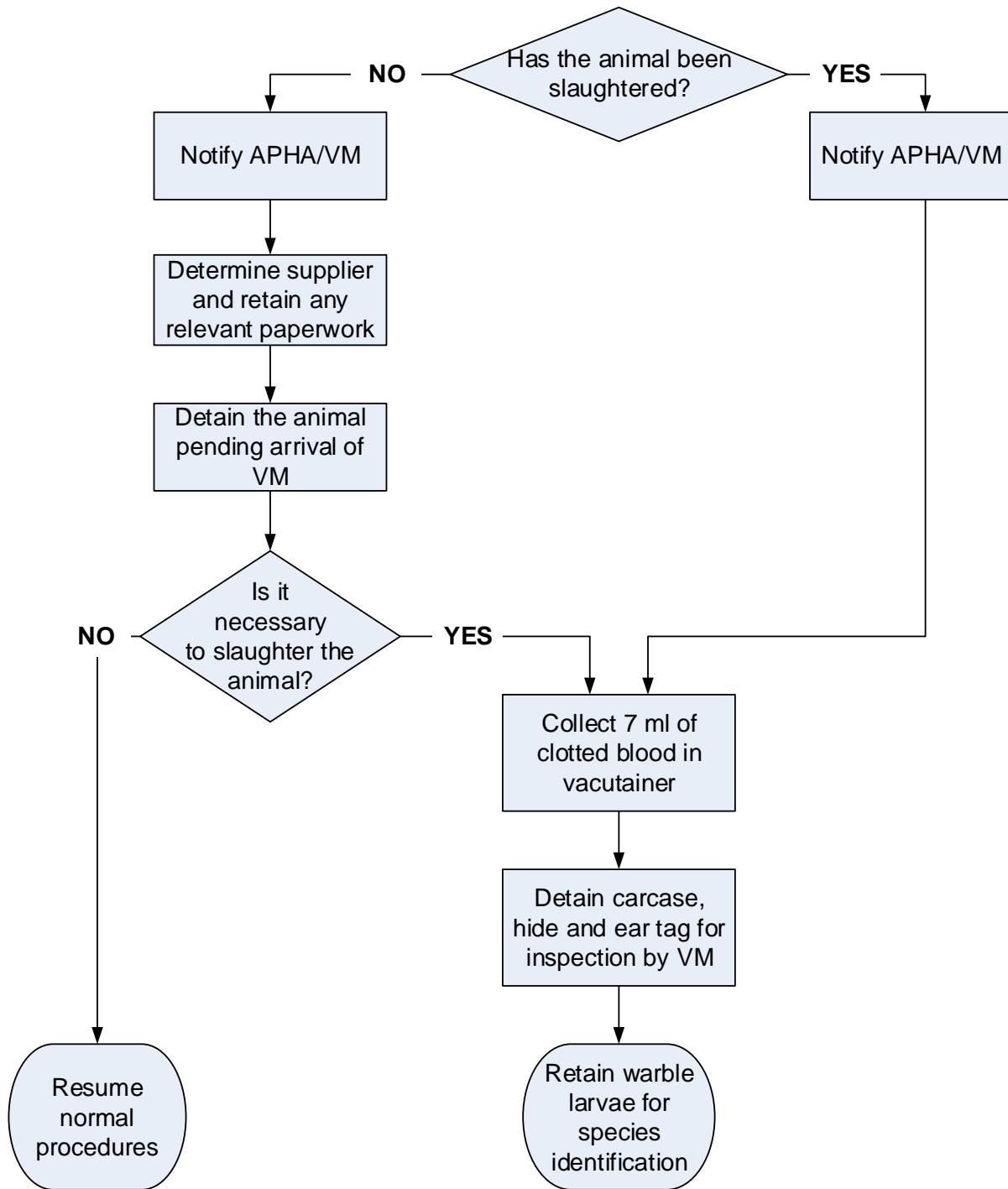
In the case of infestation detected at post-mortem examination, the carcase and hide, along with the identifying ear tag should be detained for inspection by the VM and an attempt should be made to collect any blood that may still be present in the carcase (such as in the heart or great vessels).

8.1.4 Larvae retention

Any warble larvae should be retained for species identification.

8.1.5 Procedure

The following flow chart outlines the procedure to follow if the OV suspects a Warble Fly infestation.



9. Annexes

Annex 1	AN24 – Form A: Notice
Annex 2	AN1 – Report
Annex 3	AN2 – Certificate
Annex 4	BS112 – Licence
Annex 5	BS15B – Notice
Annex 7	EBL9 – Licence
Annex 8	EBL7 – Submission form
Annex 8a	CS117 – TB/ EBL FSS consumables for other red meat abattoirs form
Annex 8b	CS118 – TB/ EBL FSS consumables for APHA contracted abattoirs
Annex 9	Sample: TB24
Annex 10	Sample: TB24c
Annex 11	Sample: TB16b
Annex 12	TB24b
Annex 13	Sample: TB24g
Annex 14	Sample: TB104
Annex 15	Sample: TB110 Reactor sampling and submission form
Annex 16	Sample: TB50
Annex 17	Description of lesion template
Annex 18	Sample: TB24a
Annex 19	Sample: TB55a
Annex 20	FSS consumables requisition form
Annex 21	CS115 – DNA equipment form
Annex 22	Material for DNA analysis
Annex 23	Sample Despatch Process
Annex 24	Aujeszký's Disease Training Note