VRA 2A: What are the risks of causing new outbreaks of foot and mouth disease (FMD) by moving fallen stock from premises, public roads, markets, animal collection centres or abattoirs in Protection Zones or Surveillance Zones, to approved premises for disposal?

1. SUMMARY OF OVERALL RISK & RECOMMENDED ACTION

VRA30 was compiled according to terms of reference provided by the Scottish Government.

This assessment includes options for mitigating the risks associated with the specified activity, and which could form the basis of licence conditions, should the activity be permitted. The summary of overall risk below assumes that the risk mitigation measures in Section 8 are implemented.

DEFINITIONS OF RISK LEVEL (OIE 2004, DEFRA 2011):

Negligible *So rare that it does not merit consideration*
Very low *Very rare but cannot be excluded*
Low *Rare but could occur*
Medium *Occurs regularly*
High *Occurs very often*
Very High*: Events occur almost certainly*

Overall risk: The risk of allowing the activity described is **Low in the Protection Zone and Surveillance Zone**.

RECOMMENDED RISK MITIGATION MEASURES (SEE POINT 8).

2. LEGISLATION, DEFINITIONS & ASSUMPTIONS

Statutory disease control requirements are applicable to livestock premises on suspicion and confirmation of FMD. When suspicion of disease cannot be ruled out, and diagnostic samples are taken, a Temporary Control Zone will be put in place (TCZ) surrounding the suspect premises. On confirmation of disease, a national movement ban (NMB) will be enforced by introducing a national Restricted Zone (RZ). A 3 km Protection Zone (PZ) and 10km Surveillance Zone (SZ) will be implemented which place restrictions on movements and activities around infected premises to prevent spread of disease. Later in the outbreak, restrictions may be relaxed either through reducing the size of the RZ or through allowing some resumption of normal activities under licence within the RZ, SZ or PZ. In this VRA, RZ is used to refer to areas which are within the RZ, but do not also fall within the PZ or SZ

For the purposes of this risk assessment, 'fallen stock' refers only to species susceptible to FMDV and 'location' refers to a premises, public road, market, slaughterhouse or animal collection centre.

In the PZ and SZ carcases of susceptible animals can only be moved from any location under the authority of a declaration by Scottish Ministers as a measure to prevent the spread of disease (FMD (Scotland) Order 2006, Article 33(2)). Some locations are subject to specific legislation:

Markets:
In a SZ, gatherings of susceptible animals are only permitted under the authority of a licence granted by the Scottish Ministers (FMD (Scotland) Order 2006, schedule 4, paragraph

27(1)), which is unlikely to be permitted until late in an outbreak once the risk of undetected infection has dropped. This VRA is likely to be relevant to markets at the beginning of an outbreak when livestock are stuck in transit as a result of the NMB, and much later in the outbreak if markets are allowed to function under licence.

Animal Collection Centre
In the SZ means premises on the list approved from time to time by Scottish Ministers for the purpose of collecting susceptible animals for onward consignment to slaughter.

Gatherings in PZ
No animal gatherings may be held in a PZ so there will be no markets or animal collection centres in a PZ (FMD (Scotland) Order 2006, Schedule 6 paragraph 14).

Abattoirs
In a SZ or PZ movement of carcases of fallen stock from an abattoir is as noted above allowed only under the authority of a declaration by Scottish Ministers as a measure to prevent the spread of disease (FMD (Scotland) Order 2006, Article 33(2)). Abattoirs in any Zone may receive animals under licence from a SZ or PZ.

Approval of Animal-By Product Premises and Transporters.
Premises handling or disposing of fallen stock/animal by-products (ABP) require approval from the Scottish Government under Regulation (EC) No. 1069/2009, Commission Regulation (EU) 142/2011 and The Animal By-Products (Enforcement) (Scotland) Regulations 2011. The same legislation requires transporters operating independently of ABP approved premises to Register with the Scottish Government.

Disinfectants
Must be approved for use by the Diseases of Animals (Approved Disinfectants) (Scotland) Order 2008 and be used at the FMD Order dilution.

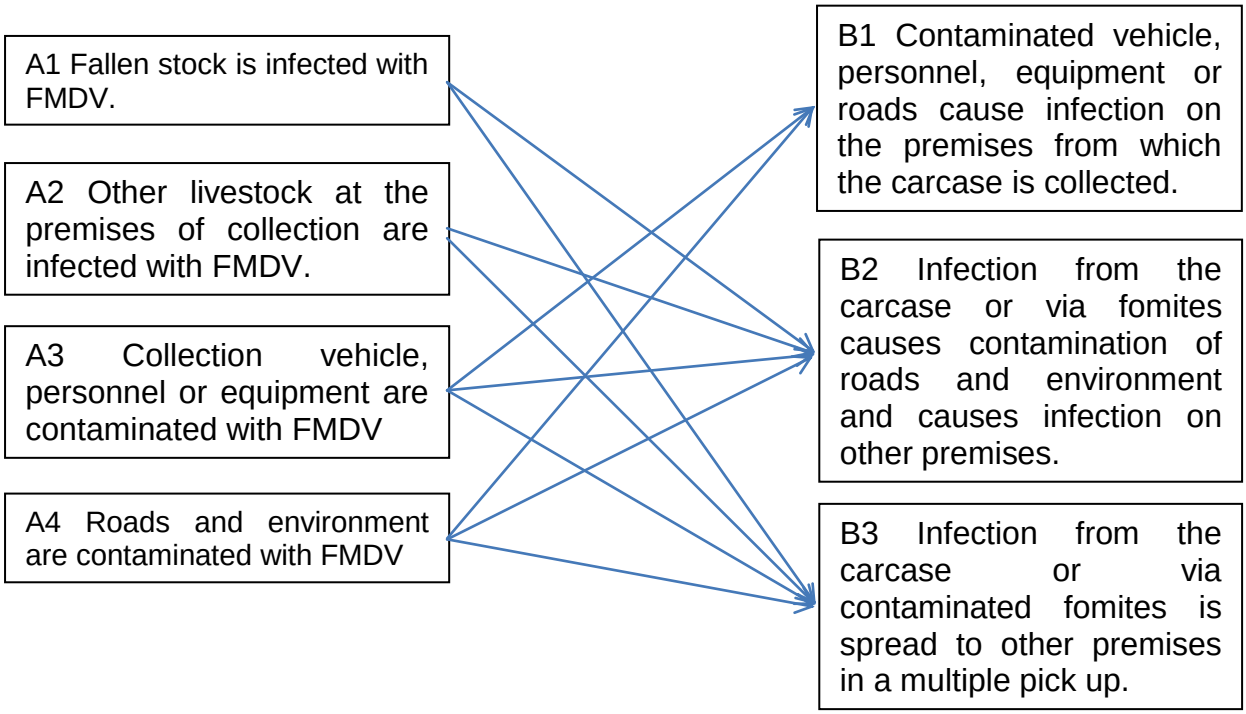
3. HAZARD IDENTIFICATION

(a) **Hazard**: FMD virus (FMDV)

(b) **Specific risk**: When there is an outbreak of FMD any movement of animals or carcases increases the risk of further disease spread. There is a risk that collection of fallen stock from any location in a SZ or PZ could lead to the spread of FMDV to uninfected premise via spread from carcases or on fomites.

However fallen stock present a hazard to public and livestock health and may increase the risk of disease spread. Burial of carcases on the premises of origin is generally not allowed. Some premises such as abattoirs and markets may in any case have no land for burial.

4. POTENTIAL RISK PATHWAYS



5. EXPOSURE ASSESSMENT

Factors which are likely to affect this probability of exposure are:	***Comments and risk estimates if/where appropriate:***
***Infection source:* A1 Fallen stock is infected with FMDV**	
• Requires fallen stock with undetected or incubating FMDV infection, or failure to report FMD	• Animals may incubate FMD for 2 to 14 days before the appearance of clinical signs (Sanson 1994), depending on initial dose, route of infection and virus strain. • Infected livestock may excrete FMD virus for several days before the appearance of clinical signs, potentially leading to transmission or contamination prior to disease detection, particularly in cattle and pigs (Alexanderson *et al.* 2003, Orsel *et al.* 2009). • FMD in sheep can be difficult to detect clinically as not all animals show clinical signs, and clinical signs are usually mild and short lived (Hughes *et al.* 2002). • Whilst FMDV does not often cause mortality in adult animals, infection may be present in animals that die from other causes.
• Likelihood that a carcase is infected depends on the location that the fallen stock is collected from and the risk level of the premises of origin of livestock on the location	• Risk that an animal or carcase is infected is higher at locations containing animals from multiple premises – markets, abattoirs and animal collection centres. • For markets, abattoirs and animal collection centres the highest risk is presented by

	fallen stock originating from premises with undetected FMDV, particularly premises within the PZ or SZ where undetected FMDV is most likely. • For fallen stock on individual premises the highest risk is presented by collection of carcases from premises with undetected FMDV, particularly premises within the PZ. • For fallen stock collected from public roads the highest risk is presented by animals that strayed before death and may have had direct or indirect contact with livestock on multiple premises, potentially with undetected FMDV. Carcases collected from or near to the PZ present the highest risk. • Risk of a premises being infected is highest if it is adjacent or close to premises with FMDV. Once a NMB is in place, most transmission occurs by local spread (<3km from an infected premises) (Gibbens et al. 2001, Keeling et al. 2001, Haydon et al. 2003). • Risk of airborne transmission decreases rapidly with distance from premises with FMDV and is only likely to occur over significant distances if many infected animals (especially pigs) are present (Donaldson and Alexanderson 2001). • In a PZ, there are confirmed infected premises. There is a risk of as yet undetected premises with FMDV. Overall the risk of local transmission is Medium. (The risks from collection of fallen stock are low with all mitigating factors in place). • In an SZ, there are confirmed infected premises within 10km but >3km. There is a risk of as yet undetected premises with FMDV. Overall the risk of local transmission is Low.
• Extent and timing of movements of susceptible animals from high risk areas	• Requires movements of infected animals before the NMB, or movements of animals with undisclosed infection by licence prior to declaration of a PZ/SZ. • Likelihood of movements having taken place is influenced by type of premises, for example finishing units are likely to move animals in on a regular basis, whereas closed high-security units would represent the lowest risk. • In a PZ or SZ transmission is most likely to result from direct or indirect contact with infected animals on Is. Indirect contact may be via fomites or airborne spread. • Airborne spread of FMDV has been documented over tens of km but is more commonly responsible for local spread only (<3km) (Gibbens *et al* 2001), so is more likely to occur within the PZ than within the SZ.

	• Identifying the number and nature of livestock movements from high risk areas using livestock movement databases and tracings would allow better quantification of the risk. • Completion of tracings from all infected premises in the PZ would also give greater certainty.
• Proximity of market, animal collection centre or abattoir to PZ.	• Close proximity of gathering premises to the PZ increases the risk that animals may have originated from undetected premises with FMDV. An abattoir may operate in the PZ and animals may be licenced out of the PZ to an abattoir in a SZ (or RZ). Although no gatherings (markets or animal collection centres) may be held in a PZ they may operate in the SZ, close to the PZ. In addition there is increased risk of indirect transmission via roads, vehicles, personnel, equipment or air borne infection
• Movements of animals prior to arrival at market, animal collection centre or abattoir.	• Animals which have moved recently prior to coming to a market, animal collection centre or abattoir present a high risk of having been exposed to FMDV. • Statutory standstills should ensure that animals moved to markets have not been moved or been to another market within the previous 13 days in Scotland (20 days for pigs). This reduces the risk to very low assuming full compliance. Animals could also have moved from England, where statutory standstills are 6 days for cattle, sheep and goats. • Animals consigned to an abattoir, or to an animal collection centre for slaughter animals, are exempt from statutory standstills. They or other animals on the holding of origin may have moved recently. • Inspection of all susceptible animals on the premises prior to movement is a prerequisite for issue of a license to an abattoir, market or animal collection centre.
• Stage of outbreak	• Early in the outbreak there is increased risk of undetected infection and lack of information on movements and links to infected premises.
• Likelihood of detection and transmission is influenced by FMD virus strain	• There are 7 serotypes of FMDV: O, A, C, SAT1, SAT2, SAT3 and Asia 1. The different serotypes (and different strains within each serotype) have different characteristics for example in terms of host species susceptibility, length of incubation period, ease of detecting clinical signs and likelihood of air borne transmission (Kitching and Hughes 2002, Gloster *et al.* 2008). Much UK research is based on the 2001 outbreak, which was caused by serotype O, strain PanAsia. However future outbreaks may involve other serotyopes/strains and

	therefore present different epidemiological situations. On confirmation of FMD, the serotype and strain would be identified by The Pirbright Institute. This information would help to inform estimates of risk.
• Amount and viability of FMDV on carcase, if it is infected.	• Total viral burden varies with stage of clinical disease and is greatest around the time that clinical signs appear. Virus concentrations are greatest in vesicular fluid (Sellers 1971), on day 2-3 after the onset of clinical signs. By day 4-5 virus titre is reduced. Animals with clinical signs are likely to have been detected so the likelihood of fallen stock for collection having clinical signs is low. • FMDV can be detected up to 3 days before the appearance of clinical signs (reviewed by Alexanderson *et al.* 2003). This means there is a risk of potential transmission before the appearance of clinical signs (though much smaller than if clinical signs are present, when virus production and transmission peaks). Before clinical signs develop, the main sources of virus are saliva, nasal and lachrymal fluid, milk and expired breath (Alexanderson *et al*. 2003). • FMDV is easily killed by appropriate disinfectants. Disinfection of the carcase reduces viral contamination. • Bagging and sealing the head of fallen stock after disinfection of the carcase may reduce the risk of virus contamination from an animal with incubating or undetected infection. • Bagging heads can be physically demanding, and puts personnel in close contact with the carcase, increasing the likelihood of contamination of their protective clothing with FMDV. Bags may fall off and the risk of potentially FMDV contaminated plastic blowing away onto livestock premises has to be balanced against any benefit. • FMDV is very sensitive to pH and becomes uninfective if the pH drops below 6. Muscle pH drops sufficiently following death to inactivate FMDV in muscle tissue within 24-48 hours. However, FMDV can remain viable in tissues such as bone marrow, lymph nodes and blood for weeks to months (Cottral 1969). • Low temperature (4^{o}C) and relative humidity greater than 60% allow good survival of virus (Donaldson 1972, Bartley *et al.* 2002).
Infection source: A2 Other livestock at the premises of collection are infected with FMDV	
• Proximity to infected areas, movement of animals, stage of outbreak, presence of undetected or incubating infection, strain differences	• As above.

• Number and species of animals at location.	• Larger numbers of animals, from multiple sources, increase the risk that some may be infected, and increases the number that would be exposed to infection if present • Cattle and pigs produce more virus, and present a higher risk of disease transmission during the incubation period. • Whilst virus production in sheep is lower, disease in sheep can be difficult to detect (Hughes *et al.* 2002), meaning that the disease can often spread more widely before detection.
• Origin or geographical spread of animals at location.	• There is a higher risk of FMD infection in animals at markets, animal collection centres or abattoirs where animals are likely to have come from multiple premises • If animals originate from infected areas, or from a wide geographic area there is more risk of bringing in animals with FMDV. Abattoirs in any Zone may receive animals under licence from a SZ or PZ.
• Degree of mixing of animals at market, animal collection centre or abattoir	• More mixing means animal is more likely to have been exposed to FMDV.
• Amount of time spent in market, animal collection centre or abattoir	• Increases time at risk of transmission of FMDV if present.
• Geographic spread of destination premises for livestock on location	• Animals from markets may be disseminated over a wide area and over significant distances. If FMDV is present the impact may be severe. • The risks are less significant in abattoirs and animal collection centres dedicated to slaughter animals as animals are promptly slaughtered. Slaughter halts virus production. Risks of onward spread become limited primarily to animal by-products and any fallen stock collected, where risks should be well managed.
Infection source: **A3 Collection vehicle, personnel and equipment are contaminated with FMDV**	
• Presence of susceptible livestock or carcases at premises from which transport despatched	• Presence of livestock or carcases introduces risk of vehicle, personnel or equipment being contaminated on leaving the premises if undetected infection present. Livestock are not commonly present on premises used for processing or disposal of animal by-products so this risk is very low. • Intermediate ABP handling facilities may have carcases collected from wide area, including SZ and PZ. With good biosecurity this risk is very low.
• Movement history of vehicle	• Any previous movements to premises in the SZ and PZ increase risk. Movements to multiple slaughterhouses or other premises increase risk.
• Failure to thoroughly cleanse and disinfect vehicle, personnel and equipment prior to leaving each premises visited, including disposal premises	• FMDV is very sensitive to approved disinfectants and good biosecurity will reduce risk of virus transfer to roads via fomites such as personnel, vehicles and equipment

	• Organic material may protect virus and may inactivate some disinfectants. Lack of hard standing on collection premises to allow effective cleaning prior to disinfection increases risk of FMDV survival and transfer between premises and to roads.
Infection source: **A4 Roads and environment are contaminated with FMDV**	
• Proximity to premises with FMDV, stage of outbreak, strain differences	• See A1 above
• Biosecurity of local premises, cleansing and disinfection procedures in place	• FMDV is very sensitive to approved disinfectants and good biosecurity will reduce risk of virus transfer to roads via fomites such as personnel, vehicles and equipment. • Organic material may protect virus and may inactivate some disinfectants. Lack of hard standing on collection premises to allow effective cleaning prior to disinfection increases risk FMDV survival and contamination of roads.
• Presence of susceptible wildlife species	• All British deer species are susceptible to infection and can transmit virus to domestic livestock experimentally (Gibbs et al. 1975).Wild boar are also susceptible (Elbers et al. 2003, Hartley 2010) but the density of wild boar in UK is very low. However, in Western Europe post-outbreak serosurveys and diagnostic testing of animals with suspicious clinical signs have never revealed deer or wild boar carrying FMDV antibodies or FMDV (Elbers et al. 2003, Mouchantat et al. 2005) and there is no evidence to suggest that deer or boar have played a role in FMDV spread in UK. Other wildlife species can carry FMDV mechanically but this is very unlikely to be important except close to infected premises. Overall the risks of wildlife causing contamination of roads or the environment in the SZ are negligible, and very low in the PZ.
• Survival of FMD virus on road	• FMD can survive on average for 2 to 3 months in bovine faeces at 4oC. Survival duration increases with decreasing temperatures and presence of organic material and varies with virus strain (reviewed by Bartley et al. 2002).
Risk of transmission: **B1 Contaminated vehicle, personnel, equipment or roads cause infection on the premises from which the carcase is collected**	
• Number of stops, multiple pick ups	• Increasing number of locations visited increases risk of transmission
• Collection vehicle, personnel or equipment in contact with susceptible livestock	• Risk will be higher if vehicle or personnel are in contact with other susceptible livestock at the premises and could be reduced by ensuring carcases can be collected without contact with susceptible livestock, for example at perimeter of premises.
• Unsuitable vehicles, failure to thoroughly	• If vehicles are not suitable, (i.e. lined with

cleanse and disinfect vehicle, personnel and equipment prior to leaving each premises visited, including disposal premises	impervious easily cleaned material, leakproof, equipped with an adequate sized tank to collect all blood and liquids released from carcases, and enclosed/covered by an impervious cover), there is an increased risk of contamination. • FMDV is very sensitive to appropriate disinfectants and good biosecurity will reduce risk of virus transfer to roads via fomites such as personnel, vehicles and equipment.
Risk of transmission: **B2 Infection from the carcase or via fomites causes contamination of roads and environment and causes infection on other premises**	
• Number of infected carcases	• Risks from carcases where no clinical signs were detected are low since even if FMDV is present, the viral load is likely to be very low.
• Cleansing and disinfection of vehicle, personnel, equipment	• Thorough cleansing followed by disinfection with an approved disinfectant at FMD Order rate greatly reduces contamination of the vehicle. The risks associated with movement of infected material can be virtually eliminated by effective cleansing and disinfection. However, failure to conduct adequate cleansing and disinfection remains a risk
• Suitable vehicles	• If vehicles are not suitable,(i.e. lined with impervious easily cleaned material, leakproof, equipped with an adequate sized tank to collect all blood and liquids released from carcases, and enclosed/covered by an impervious cover), there is an increased risk of contamination
• Distance and time travelled, number of stops	• Increasing journey distance or time increases risk of contamination from vehicle. Increasing number of stops increases risk of contamination from both vehicle and personnel.
• Proximity and density of susceptible livestock to transport route.	• Increases risk that if any leakage of virus does occur, it will result in new outbreaks.
• Proximity and density of susceptible livestock to any disposal or intermediate handling premises.	• Increases risk that if any leakage of virus does occur, it will result in new outbreaks. • Risk reduced if transported direct to disposal premises where carcases unloaded in an enclosed building with good biosecurity. • For intermediate premises risk reduced by transfer of intact carcases within an enclosed building with good biosecurity.
• Failure to fully empty the vehicle and undergo cleansing and disinfection of vehicle, personnel and equipment after transport	• Increases risk of onward virus transmission
• Personnel transporting or handling carcases keep and care for susceptible livestock	• Increased risk due to close contact with susceptible livestock
Risk of transmission: **B3 Infection from the carcase or via contaminated fomites is spread to other premises in a multiple pick up**	
• Number of stops, multiple pick ups	• Increasing number of stops increases risk of transmission between premises.
• Collection vehicle, personnel or equipment	• As above

in contact with susceptible livestock	
• Unsuitable vehicles	• As above
• Failure to thoroughly cleanse and disinfect vehicle and personnel	• As above

6. CONSEQUENCE ASSESSMENT

Spread of disease to uninfected premises. Although the risk is likely to be low, introducing infection to a market situation could have serious consequences in terms of dissemination of disease over a wide geographical area. Potential for severe consequences for fallen stock at an animal collection centre or abattoir is lower than for a market since all animals at these locations will be destined for immediate slaughter. Wide geographical dissemination of infection is unlikely.
It is recognised that the knackery industry in Scotland is limited to a small number of businesses, some operating over a wide geographic area. Some carcases are consigned for final disposal out with Scotland. Poor vehicle or biosecurity standards could potentially lead to widespread dissemination of FMDV to uninfected premises, in previously uninfected areas.

7. RISK MANAGEMENT OPTIONS/ADVICE

There are risks that permitting movements of fallen stock from premises, public roads, markets, animal collection centres and abattoirs for disposal, as an exemption from Protection Zone and Surveillance Zone measures, could lead to FMDV spreading to uninfected premises.
The greatest risks are associated with animals with undetected infection, either because they are still in the incubation period, or because there are few clinical signs, as is often seen with sheep. The risks are higher in the early stages of an outbreak, when one incubation period has not passed since the last confirmed case, and information on animal and fomite movements has not been collated and followed up. Collection of fallen stock from premises and roads in the PZ, and to a lesser extent the SZ, presents a significant risk, but is likely to be necessary even in the early stages of an outbreak. The potential impact is higher for markets than for collection of fallen stock from other locations due to the possibility of widespread dissemination of infection via a large number of susceptible livestock if contamination reached livestock at the market. However, markets (and animal collection centres) are unlikely to be operating until late in the outbreak, when the risk of undetected infected premises is low. Operator compliance is important and risk increases with the use of unsuitable or leaking vehicles or insufficient cleansing and disinfection.

Potential risk management options are:

(i) Do not allow movements of fallen stock
(ii) Allow movements with certain conditions:
    (a) Ensure animals regularly checked for signs of FMD.
    (b) Ensure adequate cleansing and disinfection before and after pick up.
    (c) Limit numbers of premises visited during pick-ups.
    (d) Ensure vehicles are appropriate for transport (enclosed and no leakage).
    (e) Ensure location, operation, structure and biosecurity of handling and disposal premises meets minimum standards to prevent dissemination of FMDV

Since burial on premises is generally not permitted, removal of fallen stock is necessary for reasons of animal and public health so option (i) is not feasible. Therefore collection of fallen stock should be permitted but conditions should be in place to reduce the risks of contamination.

Overall the risk is low in the PZ and SZ, provided mitigation measures are observed.

This risk level was assigned based on scientific literature available, expert and veterinary opinion where appropriate by considering the risk pathways and the factors affecting each risk pathway, as listed in sections 4 and 5.

8. SUGGESTED RISK MITIGATION MEASURES

Collection of fallen stock from livestock premises in a Surveillance Zone or Protection Zone represents a low risk and can be permitted under a general licence provided the following risk mitigation strategies are in place.

A. Before movement

i) Transporters must be approved or registered under appropriate legislation.
ii) Transporters must ensure only suitable, covered and leakproof vehicles of impervious construction are used, equipped with effective drainage and a sealed tank to collect all blood and liquids released from carcases. Given variation in the standards of vehicles used specific AHVLA approval of individual vehicles for use in the SZ and PZ is recommended. Premises are not to allow vehicle on premises if obviously not suitable.
iii) Transporters must ensure all personnel going onto premises are wearing clean clothing, clean and disinfected protective clothing and boots, that the vehicle has been cleansed and disinfected prior to arrival on premises, and that all equipment used is appropriately cleansed and disinfected.
iv) Stockmen should inspect livestock regularly to ensure there are no clinical signs suggestive of FMD. Inspection of livestock by a veterinary inspector will be a prerequisite for licensing of movements of livestock from farms to abattoirs and animal gatherings.
v) Transporters should complete Commercial Documents before handling carcases where possible, and leave a copy securely in a polythene bag, or other container provided on the location.
vi) Carcases to be collected should be collected at an access point on the perimeter of the premises, and be left in a covered leakproof container, or on hard standing.
vii) Carcases, with special attention to orifices, to be sprayed with disinfectant prior to loading, and impermeable plastic to be placed over heads of carcase. (AHVLA may consider whether or not the later point is considered practicable)
viii) Driver of vehicle to indicate arrival prior to going on location.
ix) Driver and vehicle to have no contact with susceptible livestock on location.
x) Vehicle, equipment and personnel to be thoroughly cleansed and disinfected prior to leaving location. Sufficient supplies of water and disinfectant should be carried on the vehicle for this purpose.
xi) Drivers of collection vehicles should not keep or care for susceptible livestock.

B. During movement

i) The route taken must be as short as possible and not come into contact with any livestock or susceptible livestock premises other than those arranged.
ii) As few premises as possible should be visited on each journey.
iii) Start with lowest risk premises and move to highest risk in accordance with guidance at C below.
iv) A contingency plan should be kept in case of accident or breakdown *en route*, to minimise any increased likelihood of spread of disease if it was present.

C Multiple Visits

i) Carcases may be collected from more than one location in any one day provided all conditions are met.
ii) Vehicles must be unloaded, cleansed and disinfected at approved premises at least once every 24 hours.
iii) Collections must start with lowest risk premises and move to highest risk.

a. Transporter may collect carcases in the RZ prior to collections in the SZ and PZ, in that order.
b. Up to 5 collections may be made from holdings or public roads in the SZ.
c. Only one collection may be made from an abattoir, market or animal collection centre in the SZ. Must be the last visit before unloading at approved premises.
d. Only one collection may be made from a holding, abattoir or public road in the PZ. Must be the last visit before unloading at approved premises.
e. Pig premises should be last visit before transport to approved handling or disposal premises regardless of Zone.

D After movement

i) The intermediate handling and processing/disposal premises must be approved under appropriate legislation.
ii) All handling and unloading/loading of carcases must be done in enclosed buildings which are readily capable of cleaning and disinfection. The ability to comply with this and other mitigating factors should be confirmed by AHVLA for sites handling or disposing of carcases from the SZ and PZ.
iii) There must be no "live" livestock on the handling/disposal premises.
iv) Personnel on handling/disposal premises must not keep or care for susceptible livestock
v) Care and every effort must be made to keep "dirty" and possibly contaminated areas, vehicles and equipment separate to "clean" areas, vehicles and equipment.
vi) All personnel leaving any "dirty" area or having used such vehicle or equipment must thoroughly cleanse and disinfect, or change clothing, prior to entering a clean area, or leaving the premises. All vehicles and equipment leaving a dirty area must be thoroughly cleansed and disinfected. Wheels and wheel arches of all vehicles leaving site must be disinfected.
vii) Disposal of carcases must take place without undue delay at approved premises.

9. SOURCES OF EXPERT ADVICE

This VRA is substantially based on: VRA6, which was compiled by Harriet Auty and Lisa Boden (EPIC CEADO) Dated: 14/02/2012.

10. AUTHORS

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12. NOTES

None