



BVD Code of Good Practice



An Roinn
**Talmhaíochta, Comhshaoil
agus Gnóthaí Tuaithe**

Department o'
**Fairmin, Environment
an' Kintra Matthers**

Introduction

What is the purpose of this Code?

The aim of this Code is to highlight strategies that farmers can use to control Bovine Viral Diarrhoea (BVD) at the farm level. This will improve animal health and welfare and reduce the impact of BVD on farming families. BVD control will also lower the environmental impact of keeping cattle and help to reduce the need for antibiotic use on farms. The overall ambition is to eradicate BVD in Northern Ireland.

Who is it for?

This Code is for all cattle keepers in Northern Ireland (NI). It applies to cattle of all ages and has been created as guidance for farmers. A summary of the key actions that herd keepers should take is at Appendix One. The aspects of this Code which are mandatory are described in Appendix Two. Many of the hygiene principles in this Code also apply to those whose work takes them on to cattle farms.

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Strategies to deal with BVD at farm level

The presence of infection depends on multiple factors, including the features of the BVD virus, farm characteristics, the presence of a control programme, farm location, vet interactions, and the wider farming environment. Good management can mitigate against disease outbreaks, and risk assessment and management can reduce the chance of introduction and within-herd spread of infection.

Infectious diseases can be caused by many different types of bacteria, viruses, fungi and parasites, and while these various diseases often require quite different treatment and control strategies, the similarities between infectious diseases mean that elements of control strategies can help control other infectious diseases. Therefore, action taken to deal with the BVD virus can have multiple benefits in terms of dealing with other diseases.

Knowing the different ways infection can be obviously present on a farm is important when trying to prevent or tackle infectious diseases. BVD Persistently Infected (PI) calves produce large amounts of the infectious agent, potentially spreading it to other animals and shedding the virus into their immediate environment, for example, in dung, urine, nasal secretions, abortion and calving fluids. The BVD virus persists in herds by the creation of further Persistently Infected calves. Therefore, identification and removal of PI cattle is key to controlling this disease. Vaccination to maintain immunity in breeding stock can offer further protection where susceptible pregnant cattle are exposed to BVD virus, as infection of the unborn calf between approximately 30 and 120 days of pregnancy will result in it becoming persistently infected with BVD virus if the calf is not aborted. While many PI calves appear ill if born alive, some can initially appear normal. However, all PIs generate very high levels of the BVD virus and are a considerable infectious risk to other cattle. Most do not survive to a productive age or size.

On infected premises, good biosecurity can help to overcome contamination, through simple farm biosecurity procedures such as cleaning and disinfecting. Not all animals will get sick when exposed to an infectious agent and the outcome will depend on the balance of the severity of the challenge by the infectious agent and the status of the animal's immune system.

In this guide, these principles are detailed further in conjunction with practical advice.

Guidelines

1. Biosecurity/Keeping BVD out

What are the most important disease threats from outside my farm?

In order of decreasing importance, the disease threats to your livestock from outside your farm are:

Direct disease spread from animals	<ul style="list-style-type: none"> • added animals • neighbouring animals
Indirect disease spread	<ul style="list-style-type: none"> • farm visitors (especially those who have direct contact with animals e.g. vets, AI technician, hoof-trimmer etc.) • slurry • animal equipment • wildlife, vermin and other animals • biological materials • farm environment

Direct disease spread from animals

What can I do to reduce the risk of disease coming onto my farm from ADDED ANIMALS?

Added animals present the highest risk of introducing disease. Added animals are those bought-in, 'borrowed' or returned from marts, shows or contract rearing premises. Bought-in animals are the highest risk. Many diseases are carried by animals that are not sick and appear completely normal. They are silent carriers that can bring disease into the herd quietly but effectively. All ages of animals being bought in have disease risks. The best and most obvious way to reduce the risk of new diseases coming into your herd from added animals is to close your herd. You don't have a CLOSED HERD if you are: buying in bulls, borrowing bulls, exhibiting at shows, sharing cattle handling facilities, returning unsold cattle to your farm or using common grazing or housing.

- If you need to purchase animals and are purchasing directly from a farm, ask whether the herd is vaccinating against BVD, whether there has been BVD in the herd during the past 18 months and if there are currently BVD Positive animals on the premises.
- On arrival, quarantine new stock away from your own stock for 4 weeks.

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What can I do to prevent disease coming into my farm from NEIGHBOURING ANIMALS?

Good boundary fencing should prevent break-outs, break-ins, nose-to-nose contact between herds and reduce aerosol spread of infectious agents by livestock. Double fencing may include electric fences. Ditches and hedging also reduce the risk of contact with neighbouring animals.

- Prevent nose-to-nose contact and animal break-ins/break-outs
- Maintain stock-proof farm boundaries, eg rebuild stone walls, block gaps
- When possible, avoid grazing fields at the same time as neighbouring fields are also occupied with livestock.

Indirect disease spread

What can I do to prevent disease coming onto my farm from FARM VISITORS?

Clean boots are essential for visiting farms. Every farm has visitors, and every farmer should aim to minimise disease risks from outsiders. High risk visitors are those who have direct and frequent contact with other farm animals and your cattle, eg veterinary practitioners, other farmers (especially those who also work on your farm), AI technicians, agricultural consultants, hoof trimmers, scanners, sales personnel and collectors of deadstock.

- Keep farm visitors to a minimum
- Use signage to direct farm visitors to a contact point or a mobile number
- Reduce direct contact between visitors and your stock
- Provide personal protective clothing for visitors such as gloves, footwear, overboots, overalls, and provide cleaning facilities
- Restrict deadstock collectors to areas away from where livestock are kept.

What can I do to prevent disease coming onto my farm from SLURRY?

Discuss with your vet the risk of using imported slurry/manure from other farms, or products from anaerobic digestion plants. Where possible don't use imported slurry. If you have to use imported material, spread it on silage ground in preference to grazing land. Use dribble bars or injection systems which reduce the contamination of grass with slurry by placing the slurry at or below soil level. If spreading on grazing land, maximise the time between when slurry is applied, and livestock are admitted to the pasture. If you use contractors, even if only spreading slurry from your own herd, ensure equipment is as clean as practically possible before they enter your farm and have them spread on silage ground first. Inevitably the contractor's equipment may contain some slurry from the farm the contractor was last on. By going to silage ground first, any risks from carry-over slurry are minimised.

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What can I do to prevent disease coming onto my farm from EQUIPMENT?

High risk animal equipment is that which is contaminated with body fluids (saliva, mucus, blood, nasal secretions, and birth fluids) or faeces and is used directly on or by your animals. These fluids can all carry disease-causing organisms. Examples include ear notch taggers, calving equipment, hoof paring equipment, scanning equipment, nose tongs, stomach tubes, gloves, portable crushes, multiple injectors, weighing scales and trailers.

- Provide your own animal equipment and don't lend it out
- Wash and disinfect non-disposable equipment
- Don't share a crush, race or loading pen with neighbours. If this is unavoidable, disinfect these facilities before and after use.

How to reduce disease risks from BIOLOGICAL materials:

- Do not 'borrow' and feed colostrum or whole milk from another herd
- Purchase semen and embryos from reputable suppliers
- Never use a syringe or needle that has been used on other farms
- Always purchase approved medicines from licensed suppliers.

2. Stop BVD spreading in the herd

Bio-containment, or limiting the spread of disease, should be the focus when dealing with an on-going disease outbreak but it is preferable to build it into good farming practice to prevent disease problems occurring in the first place. Threats can arise from infections that have been recently introduced to a herd or that are endemic (ie present in the herd). It is important to know the health status of your herd and to reduce the sources of infection in order to improve immunity and to prevent spread.

In a BVD breakdown scenario, it is vitally important to prevent spread. Once identified, the best option is to move PIs promptly to an isolation area and cull them as soon as possible.

Which animals need to be isolated?

Isolation of an infectious or potentially infectious bovine is a requirement under The Bovine Viral Diarrhoea Eradication Scheme Order (Northern Ireland) 2016. This applies to cattle with a BVD Positive result, Inconclusives, Dams and Offspring of Persistently Infected animals. In addition, any animal that the keeper believes may be infected (for example, calves showing clinical signs of BVD on a farm with confirmed infection) should be separated from healthy stock. Cattle should be isolated on the holding as soon as the non-negative BVD results are received or clinical signs noted.

Why isolate?

Isolation of infectious or potentially infectious stock reduces the risk of the BVD virus spreading to healthy animals, particularly in-calf stock, and so may prevent virus circulating in the herd and shorten the length of time for which the BVD virus is present on the farm. Isolation should never be used to retain a PI animal. It should only be used to hold an animal long enough to allow follow-up testing or until the animal can be euthanased.

Animal welfare

The welfare of an animal in isolation is important and it is recognised that on occasion an isolated animal may need to be kept with another bovine animal (the minimum number of animals should be used). The animal accompanying the infectious/potentially infectious animal should have had a BVD virus Negative test result, and it should not be a possible onward transmitter of BVD (that is, not an in-calf female, or a bull/bull calf intended for breeding). Animals being kept in isolation should not be bred. They should be checked regularly for any signs of disease or illness.

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Personnel

Anyone entering a BVD isolation facility should wear footwear and clothing that is dedicated for the premises. If this cannot be done, clothing must be cleansed and disinfected before entry and leaving the farm. However, it can be very difficult to fully cleanse and disinfect clothing, so providing dedicated clothing is preferable. Care should be taken to avoid the transfer of potentially infective material on clothing or hands, especially when going from one group of animals to another. Visitors to the farm should not be allowed to enter the isolation facility and they should take care to clean and disinfect footwear and waterproof clothing both on arrival and before departure.

3. Purchasing policy

When purchasing cattle, there is a risk of a range of diseases being introduced into your herd. The risks increase with the number of animals bought and the number of herds from which they come. If introducing animals, plan to do so as few times as possible and be aware of how the health of your home bred animals may be affected by the health status of the bought-in animals.

Buy in as few animals as possible from as few herds as possible

Minimise the number of animals that need to be purchased. If possible, buy from farmers with whom you have built up a relationship, so that you know their herd's health status.

Reduce transport risks

Use your own clean, disinfected transport where possible. Don't mix your animals with animals belonging to other herdowners during transport.

Implement a quarantine period

Quarantined animals should be in complete isolation from the rest of the herd and should not share the same airspace. Animals should be quarantined for at least four weeks. You should draw up a quarantine protocol with your veterinary practitioner which should include:

- Monitoring for any clinical signs of disease
- Vaccinating and dosing animals to ensure they have received the same protective treatments as your own animals
- Testing for specific diseases to reduce the risk of accidental introduction of these diseases
- Quarantining and isolating pregnant stock on arrival and until they have calved, and the calves been tested with negative BVD results.

If you must purchase pregnant animals, how can you minimise the risk of introducing a Trojan?

- Discuss all aspects of herd biosecurity with your own veterinary practitioner. Include the performance and interpretation of pre-purchase blood tests for antibodies to BVD virus (an animal that is negative for both virus and antibodies is very unlikely to be a Trojan).
- Buy lower risk animals. Purchase animals from herds where the risk of pregnant animals contacting the BVD virus has been minimised. Herds that have contained one or more PI animals in the previous 18 months present a high risk, particularly where these PI animals have been in the herd after the breeding date of the purchased animals.

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- Avoid contact with other cattle. Minimise opportunities for contact of pregnant stock with cattle of unknown status during purchase and transport.
- Quarantine on arrival. Isolate purchased pregnant animals until calved and the calf has been tested with negative results.
- Contract rearing can have similar risks to purchasing. Pregnant animals being introduced following their return from contract rearing, or from other herds should be treated in the same way as purchased animals.

4. Vaccination

The goal of the current programme is the eradication of BVD virus from NI, with the core element being to identify those animals persistently infected with BVD virus and remove them from the cattle population. Associated with this, adequate biosecurity measures to prevent the accidental introduction (bio-exclusion) and spread (bio-containment) of infection in herds is critical. Increasing compliance with the programme, by culling Persistently Infected (PI) animals promptly, will hasten successful eradication of BVD, and equally shorten the overall period when provision for vaccination is required.

What is the purpose of vaccination?

The main purpose of BVD vaccination is to induce a protective immunity in breeding animals to avoid a range of negative outcomes of infection on reproduction, including failure to conceive, abortion, birth defects, and most importantly the creation of calves that are persistently infected with BVD virus. In the event of vaccinated cattle encountering the BVD virus, they are primed to mount an immune response to the virus and thus the risk of an infection becoming established (and persistently infecting the foetus) is reduced. The decision whether to vaccinate or not depends on the risk profile of the herd.

When is vaccination necessary?

There is a need for BVD vaccination on certain farms, to produce a protective immunity in breeding cattle. The immunity gained will mean that the negative effects of the BVD virus on fertility and the birth of PI calves can be avoided. As the programme progresses, the prevalence of PI animals decreases, and this is followed by a decrease in the prevalence of animals with natural immunity following exposure. On the one hand this means that the likelihood of pregnant cattle being exposed to virus will decrease but on the other hand the potential negative impact of such exposure increases. The reduction in immunity may leave herds more exposed to large outbreaks should a PI animal be introduced.

The role of vaccination in the BVD Programme

The key risk factors that have been associated with an increased probability of BVD entering a herd are:

- Large herd size
- History of BVD in the herd
- Purchase of cattle
- Purchase of 'Trojan' cattle (in-calf animals carrying a PI calf)
- BVD-Positive animals in the vicinity of the herd.

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As with all vaccines, it is important to realise that no BVD vaccine can provide perfect protection in all circumstances, even when stored and used correctly, particularly where pregnant cattle are exposed to high levels of BVD virus.

Discuss BVD vaccination with your vet

Any decision to vaccinate your herd should be taken in conjunction with your veterinary practitioner, as management factors in each herd are unique. The main factor to think about is the chance that the BVD virus will be introduced to your herd. Moved-in animals are the single biggest risk. Other risk factors should be checked, including direct contact with other livestock (for example, at boundaries) and indirect contact (such as via virus-contaminated equipment or clothing). If you are considering stopping BVD vaccination, consult with your vet first, to talk through and assess any risks to the herd that may still be present.

Timing of vaccination

BVD vaccines protect the developing foetus from infection with the BVD virus across the placenta. Check the individual vaccine data sheets; in general, the initial vaccination course should be completed three to four weeks before the breeding season. Booster vaccinations should be given, again according to the specific instructions. Pay attention to the initial critical window of susceptibility when the unborn calf is most at risk of infection (typically between 30 and 120 days of gestation) and discuss with your vet how to optimise vaccine use and value in a herd with an extended breeding season.

Pre-vaccination checklist

- Read the data sheet
- What is the earliest age at which the vaccine can be given?
- Check which vaccines can be given at the same time (note that separate primary vaccinations against various cattle diseases may need to be given at different times)
- What is the critical window for vaccinating the animal/the batch of animals that I want to vaccinate (ie taking into account the relevant number of weeks to allow immunity to develop before they are bred)?
- How can I keep the vaccine within the required temperature range while it is transported and before it is used?

5. Testing

Timely testing for BVD is essential, as the prompt identification and removal of PI cattle is key to disease control.

When to take samples

- While the calving season is a particularly busy time on many farms, herd owners are encouraged to tag calves promptly after birth (practically this means as soon as the calf is dry).
- Calves that are tested when they are older may have come into contact with a BVD virus Positive animal and thus may have a transient infection (TI) which will show up as a Positive result and mean that a retest is required.
- Under The Bovine Viral Diarrhoea Eradication Scheme Order (NI) 2016 all calves, including abortions and stillbirths, must be tagged and tested for BVD. BVD virus can be a cause of abortion, and this may be the first sign of infection in the herd. Make sure the ear of the aborted foetus is dry before taking the sample to minimise the chance of the tag slipping and no tissue being collected.
- When retesting of initial BVD Positives or Inconclusives is required, arrange for your vet to carry out blood sampling three weeks after the date that the ear tag was applied and the sample taken.
- If a retest is required following an empty sample result, apply a supplementary tag to obtain an ear tissue sample or arrange for a blood sample to be taken by your vet as soon as possible.
- To comply with the NI BVD Programme, cattle born in England, Scotland or Wales that are imported to NI must be tested for BVD virus at a DAERA approved laboratory, if this has not already been done in GB. Herd owners must arrange and pay for a tissue or blood sample to be taken within 20 days of arrival in NI, and ensure the result is negative before the animals are moved to another herd.
- Cattle which are imported from mainland Europe must also be tested. Herd owners must arrange and pay for the testing and ensure the result is negative before the animals are moved to another herd.
- Cattle imported from the Republic of Ireland will often already have been tested with a negative result in a DAERA approved lab before entering NI. Where this has been done, AHWNI will assign a negative status to the animal within 2 weeks of import. For any queries on the status of ROI imported animals please contact the AHWNI helpdesk on 028 7963 9333 or e-mail: info@animalhealthni.com.

The dam of a PI should be blood tested in order to obtain a direct result. In practice, if the calf is being re-tested it is most straightforward to test the cow at the same time. If you do not intend to re-test the calf, then you should test the dam as soon as possible. It is crucial that at least 21 days are left between first sample collection and the second (blood) sampling of the calf. An interval of at least three weeks will allow time for virus to be cleared from a transiently infected (TI) animal.

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Sample storage and dispatch

If ear tissue samples are being stored in a fridge before being dispatched to a laboratory, they should not be stored for longer than seven days. It is important that correct postage is applied to the sample envelopes. Royal Mail advises that the large letter fee should be sufficient for up to 10 samples provided they are packed flat, rather than bulked up within the envelope. Underpayment and failure to package samples appropriately may lead to sample processing being delayed or samples being disposed of untested.

Please note that postage can be purchased online: parcel details may be entered at <https://parcel.royalmail.com>, payment made and labels printed, so that large letters may be posted directly without the need to go to a Post Office.

Checking for results

Monitor results returning from the laboratories to ensure that an official result is available for each animal in your herd that has been sampled. If it is more than 10 days since samples were submitted, please contact the AHWNI helpdesk on 028 7963 9333 or e-mail: info@animalhealthni.com.

To access BVD results online, go to www.animalhealthni.com. Select 'Log in to AHWNI' then select 'Log in via Government Gateway'. Enter your ID (issued by DAERA) and password in the appropriate box to log into the AHWNI results database. If you require assistance with finding these login details, contact the DAERA helpline on 0300 200 7852. It is possible for a herdowner to view all their testing results and print negative results declarations from this database.

If I am notified that the tissue sample vial is empty, what should I do?

You will need to re-sample the animal to determine its BVD status. This can be done using a tissue sample collected by yourself using a supplementary (button) tag bearing the matching ID number which can be ordered from your tag supplier. Alternatively, you can arrange for a blood sample to be collected and submitted by your own veterinary practitioner.

6. Culling

Are there any obvious visible signs that a calf is PI?

PI calves may appear healthy, particularly at birth, but represent a significant risk of infection to other animals in your own and neighbouring herds. Over time many will fail to thrive and gradually deteriorate. Most PI cattle do not survive to reach slaughter weight, and will die before reaching 2 years of age, either from a condition called Mucosal Disease (which is unique to PI animals) or a range of other illnesses, particularly scours and pneumonias.

What should I do if I have a PI animal?

An animal is considered to be a PI if its initial BVD test result is positive or inconclusive, or if the result of a retest gives a further positive or inconclusive BVD result. The AHWNI database will have issued a letter to you identifying the positive calf and its registered dam and advising on the next steps. You are advised to isolate these animals immediately and to cull PIs as soon as possible.

There is an option to re-test the positive calf to confirm it is PI. This test can be done on a blood sample collected by your vet at least 3 weeks after the first sample. The dam of the calf is also under suspicion if she has not had a direct negative result in the past, so unless the calf attains a negative result, you will be requested to test the dam also.

Since the start of the compulsory programme, almost 90% of all calves that initially had positive test results have tested positive again on confirmatory testing. Of those that don't, most are due to delayed tagging and where calves have acquired a transient infection after birth. If a transiently infected calf is identified, this reflects that BVD virus is present in the herd, and herdowners should undertake an investigation to identify where the source of infection was and take measures to prevent further infection circulating in their herd.

Keeping PI animals leads to even more disease

Research¹ has shown that retaining BVD positive calves doubles the risk of having further PIs during the following year:

- Retaining PI animals increases the risk of spread to neighbouring herds
- The risk of a herd having BVD almost doubles if a neighbouring herd has a PI animal.

¹ Survival time of calves with positive BVD virus results born during the voluntary phase of the Irish eradication programme (Graham et al, 2015) and Quantifying the risk of spread of bovine viral diarrhoea virus (BVDV) between contiguous herds in Ireland (Graham et al, 2016).

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If a PI calf is housed with other calves, will the other calves become infected?

PI cattle are highly infectious, with virus being present in all body fluids, including dung. They are highly efficient transmitters of the virus to animals, either through direct (eg nose to nose) contact or indirectly, through contamination of the environment. It is highly likely that other cattle in contact with PIs will experience a transient (short term) infection. Transiently infected cattle are at a greater risk of other diseases such as pneumonias and scours.

What about the dams of PI calves?

Culling of a single positive calf should not be the only measure taken to protect your herd from BVD.

The mothers of all PI calves should be blood sampled and tested for BVD. If the dam tests positive, then all of her offspring are likely to be positive and should be treated as PI until tested. These animals can present the same risk to your herd as the initial PI calf and should be culled as soon as possible.

Why isn't long term isolation a realistic option?

Keeping a PI animal in the medium to longer term presents a continual risk to your herd. The animal needs to be housed in a separate airspace to other cattle. Given that the BVD virus is so infectious, it is extremely difficult to avoid the transfer of the disease via equipment or clothing. Once a positive result is received, the animal should be isolated immediately, until it is humanely destroyed.

What steps should I take to prevent accidental introduction of BVD infection to my herd?

The single biggest risk of introduction is through purchased animals, which should have a negative test result for BVD virus prior to purchase. Purchased in-calf cows or heifers should not be introduced to the herd until they have calved and tested negative.

7. Implications of positive BVD results/restrictions

Are individual movement restrictions in place?

BVD movement restrictions are in place on NIFAIS and apply to all cattle in NI. Only negative (BVDN) animals can be sold at market, sold directly to another herd or exported (including via an Export Assembly Centre). Those that do not have a recorded test result (that is, where they have not been tested or where unsuitable samples have been submitted) should either have a supplementary tag applied so that a sample can be taken and submitted to an approved testing laboratory, or have a blood sample taken for testing by your private vet. Cattle with a BVD Unknown (BVDU) status should not be moved from their holding, including to slaughter.

Which animals are banned at abattoirs?

PI cattle born on or after 1st March 2016 are voluntarily banned from NIMEA slaughter plants by Food Business Operators. The ban has full support from the UFU and other industry organisations and is regarded as a significant step towards eradicating BVD in Northern Ireland. BVDU animals are not permitted to move to slaughter.

Will my herd or other herds be affected or restricted if I keep a BVD PI animal?

PI animals are the major source of BVD infection for other animals. Contact with susceptible pregnant cattle is likely to lead to the birth of further PI calves. Any female PIs that do go on to reach breeding age will produce PI calves. Therefore, outward and inward herd level movement restrictions are in place in herds where BVD Positives or BVD Inconclusives have been disclosed. All associated herds will be similarly restricted.

Herd restrictions will be applied if a PI animal is retained. For the first 3 months after legislation comes into force, herd restriction will be applied after a 28-day grace period; for the next 9 months, herd restriction will be applied after a 7-day grace period; and from 12 months after legislation comes into force, herd restriction will be applied immediately a PI animal is disclosed.

Timing of restrictions on herds with BVD Positive (BVDP) cattle	Days after positive test result when herd restriction is applied
1st February 2025	28
1st May 2025	7
1st February 2026	0 (immediate)

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These herd level restrictions remain in place until three weeks have elapsed since removal or resolution of the last BVD Positive or BVD Inconclusive in the herd and until all cattle over 30 days of age in the herd have a BVD Negative status. In herds that have had a BVD Positive result, from 1st February 2026, all breeding females over 12 months of age in the herd will be restricted individually for 41 weeks or until their BVD status has been resolved through the birth of a BVD Negative calf or through additional testing.

Will my herd be restricted if there are untested cattle in my herd?

Restrictions will be applied to herds containing animals with unknown BVD status (BVDUs). Restrictions will be applied four months after legislation comes into force to herds with 20 or more BVDUs, six months later to herds with 10 or more BVDUs and six months further again to herds with five or more BVDUs. Herd keepers with BVDUs will be provided with 28 days' notice before restrictions are applied to allow them to test their animals. Restrictions on herds with BVDUs will be lifted immediately on confirmation of a negative BVD result for these animals.

Timing of restrictions on herds with BVD Unknown (BVDU) cattle	Number of BVDUs in herd that will lead to application of a herd restriction
1st June 2025	20
1st December 2025	10
1st June 2026	5

8. Cleansing and Disinfection

Cleaning and disinfection (C&D) are critical parts of all biosecurity programmes. The aim of C&D is to decrease the load of disease-causing organisms significantly to a point where disease transmission does not occur, however elimination of the risk cannot be guaranteed.

BVD virus survival

The BVD virus is relatively fragile and will not survive for extended periods outside the animal. Infectivity is likely to have disappeared after 3-4 weeks, however damp, cold and dark conditions favour virus survival. It is advisable not to graze pregnant cattle on ground treated with slurry/manure from positive stock for as long as possible, but any risk of animals acquiring infection should be significantly reduced after two months. This means that following an outbreak of BVD, C&D should be carried out on relevant areas and articles to minimise the risk of carry-over of infection, particularly when in-calf stock are present in the herd.

Risk of indirect spread

It is possible for the virus to be transferred between animals and between herds indirectly. PI animals shed virus in all secretions and excretions, including dung, urine, milk and colostrum, saliva and discharges from the nose, eyes and reproductive tract. Movement of these substances between groups or farms on contaminated clothing or equipment are potential means of transferring the virus. Thorough C&D should be carried out on all shared items to minimise the risk of transmission in this way.

Cleansing and Disinfection following a BVD outbreak

What to clean:

- Relevant accommodation (including calf pens/hutches, calving pens, isolation facilities), yards and crushes.
- Trailers, equipment (for example, calving aids, nose tongs, buckets, feeders), clothing and footwear with which BVD Positive cattle have been in contact.

Process of cleaning and disinfecting

To maximise effectiveness, focus on these steps:

1. Cleaning: Remove as much organic material as possible (shovel/scrape): faeces, urine, mucus, skin debris, feed, etc.
2. Washing: Remove all remaining organic matter, ideally with a high-pressure washer. Start hosing at the top and work down to the floor. Clean walls thoroughly as a lot of virus may be present on them. Soaking surfaces before washing will cut down the amount of time needed to do a complete job. Make sure any aerosols that are created cannot pass to areas where other livestock are present.

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3. Disinfecting: Use a DAERA approved disinfectant at the appropriate concentration. See www.daera-ni.gov.uk/publications/approved-disinfectants. Dilution rates, as listed for General Orders, should be used. Apply Health & Safety precautions.

Unless surfaces are completely cleaned (with none-to-minimal organic matter present), disinfection will not be effective; most are inactivated when they contact organic material. Spray with disinfectant from top to bottom. Read the label to make sure proper contact time is provided. Rinse off the disinfectant where appropriate.

4. Drying time: Allow sufficient time for extended drying so that all moisture can evaporate from the building/surfaces.
5. Resting buildings. Most disease-causing organisms slowly die out over time, particularly in dry environments. The longer an area can be rested from livestock the more likely any pathogens that may still be present after cleaning and disinfecting will have died off.

Each step of the process is dependent on the successful completion of the previous steps.

9. Veterinary involvement/Herd Health planning

It is important to have a good working relationship with your private veterinary practitioner to ensure that they are involved in preventing disease on your farm as well as treating disease outbreaks. Your veterinary practitioner is well placed to help you design a herd health plan for your farm. In addition to the investigation of individual sick cattle and disease outbreaks, your own vet can assess your farm's biosecurity and recommend changes that will improve herd health practices.

Your private vet can be a valuable source of advice when a BVD infection is disclosed in your herd. A discussion on where the infection came from, further testing that you might need to carry out, and strategies for future control including the role of vaccination, is crucial to helping you maintain a healthy herd.

10. Is this code mandatory?

This code contains veterinary advice to help in the control of BVD; failure to follow this Code will impact the health and welfare of cattle on your farm. Some elements of this code are mandatory and are listed in Appendix Two. These mandatory parts are there because they are among the most important measures that a farmer can take to protect their herd and their neighbours' herds from BVD. If statutory requirements are not followed, breaches may be subject to penalties. DAERA may follow up to encourage compliance with the regulations, for the benefit of the livestock on your farm and for the benefit of the BVD programme which aims to assist all cattle farmers in NI.

11. Useful information/Appendices

Sources of information

DAERA Direct

To contact your local DAERA Direct Office about BVD, telephone 0300 200 7840.

Animal Health & Welfare NI (AHWNI)

AHWNI is an industry-led, not-for-profit partnership between livestock producers, processors, animal health advisers and government.

Telephone: 028 7963 9333 **E-mail:** info@animalhealthni.com

Appendix One - Key actions that Herdkeepers should take

Key actions that should always be carried out	
1	Cull BVD Persistently Infected (PI) animals promptly.
2	Aborted and stillborn calves must be tagged and tested for BVD. Dispose of any fetuses and afterbirths quickly and hygienically.
3	Thoroughly clean and disinfect any accommodation where the PI was present. Compost any straw bedding from affected animals away from other livestock.
4	Ensure every animal in your herd has a negative BVD status.
5	Tag newborn calves promptly once dry.
6	Do not move animals into your herd from a herd under BVD restriction.
7	Do not share housing with herds under BVD restriction.
8	Do not share common grazing with a herd under BVD restriction.
9	Do not use or share bulls from a herd under BVD restriction.
10	Do not allow animals to graze on other herdowners' land which is under BVD restriction.
11	Do not house animals on other herdowners' premises which are under BVD restriction.
12	Do not use vehicles or equipment that have been in contact with animals from a herd under BVD restriction.
13	Do not use or spread slurry from a herd under BVD restriction.
14	Do not allow a herdkeeper with BVD infection in his/her herd to have contact with your animals.
15	Discuss vaccination with your private vet if there is a risk of BVD to your stock.
16	Keep high standards of hygiene for farm workers, visitors and anyone coming on to your premises to work with livestock.

Appendix Two - Mandatory requirements that Herdkeepers must follow

Actions that must always be carried out	
1	A tissue sample must be taken from every calf within 20 days of birth, and the sample sent to a DAERA-approved lab for BVD testing within a further 7 days.
2	A tissue sample must be taken from every aborted bovine foetus, stillborn calf, or calf which dies before being tagged, and sent to a DAERA-approved lab for BVD testing within 7 days of taking the sample.
3	Any purchased animal which has not been tested (BVDU status) must be BVD tested by tissue or blood sample within 20 days of purchase and the sample sent to a DAERA-approved lab for BVD testing within a further 7 days.
4	Any homebred animal which has not been BVD tested (eg where a 'no sample' result was returned) must be tissue or blood sampled as soon as possible.
5	Any animal which has tested positive (BVDP) or inconclusive (BVDI) must immediately be moved to housed isolation. (DAERA carry out unannounced inspections and you may be prosecuted if you do not isolate a BVDP or BVDI animal).
6	Positive (BVDP) or inconclusive (BVDI) animals must not be moved to another farm or to market.
7	Untested animals (BVDU) must not be moved to another farm, to market or to an abattoir. Only negative animals (BVDN or INDNEG) can be moved to another farm or to market.
8	If BVD herd restrictions have been applied, no animals can move out to other farms or market. Animals can only move in under licence.

BVD Code of Good Practice

The BVD Eradication Scheme is an industry-led Programme co-ordinated by Animal Health and Welfare NI (AHWNI). This BVD Code of Good Practice is supported by organisations represented on the BVD Implementation Group.

