

GUIDELINE 4

Rapidly find, record and treat clinical cases in recently calved cows

In this guideline:

- 4.1 Look for swollen quarters and check for heat and pain in all recently calved cows.
- 4.2 Check milk from all quarters of recently calved cows before every milking while they are in the colostrum period (first 8 milkings)
- 4.3 Collect milk samples for culture to identify the bacteria involved
- 4.4 Follow MRS T. Clearly mark cows to be treated
- 4.5 Follow MRS T. Record all details
- 4.6 Follow MRS T. Separate cows physically from the milking herd before commencing treatment
- 4.7 Follow MRS T. Treat with the most appropriate antibiotic as advised by your veterinarian
- 4.8 Administer the treatment as recommended
- 4.9 Use full course of antibiotics (as specified on the label)
- 4.10 Milk the quarter out fully at least every milking
- 4.11 Observe withholding times for milk and meat
- 4.12 Discard milk from all quarters of cows that receive treatment
- 4.13 Consult your veterinarian for advice if a clinical quarter fails to respond by the end of a full course of treatment

Clinical cases of mastitis are costly and significantly disrupt the milking routine. Clinical cases that are missed can dramatically increase the bulk milk SCC because they produce very high numbers of somatic cells. See [Guideline 11](#) for more information about bulk milk SCC.

Early detection and treatment of clinical mastitis in the calving period reduces the risk of severe cases developing. It also reduces the likelihood of infection being passed to other cows, and the development of chronic infections. See [Healthy Udder – Find 1](#) for pictures of signs of clinical mastitis.

By recording cow identity and antibiotics used for all cases, the numbers of clinical cases and responses to treatment can be monitored.



Use the [SmartSamm Gap Calculator](#) to calculate the benefits of improving udder health and milk quality for your herd.

Use the [Mastitis Focus report](#) to track mastitis management at calving and spot emerging problems.



Good Read

[Technote 4 - Rapidly find, record and treat clinical cases in recently calved cows](#)

4.1 Look for swollen quarters and check for heat and pain in all recently calved cows.

A swollen quarter will appear larger than other quarters on the same cow or may cause the cow to appear lame.

Cows with suspect udders should have their udders felt, or palpated, to check for hardness, heat and swelling. Foremilk should be stripped and checked for signs of mastitis - see [Guideline 4.2](#).



See [Healthy Udder - Find 1](#) for pictures of signs of clinical mastitis.

4.2 Check milk from all quarters of recently calved cows before every milking while they are in the colostrum period (first 8 milkings).

Changes can be hard to assess in the colostrum or milk in the first few days after calving. Look for:

- Changes in colour - yellowy brown or creamy colours, sometimes blood.
- Changes in consistency - clots, lumps, flakes or watery milk.

Milk containing bacteria can be spread from cow-to-cow when stripping cows. Gloves should always be worn when checking cows for mastitis, as they are easier than bare hands to rinse and keep clean. A good practice is to disinfect gloved hands after stripping a cow with clinical mastitis e.g. by dipping gloved hands in a 1% iodophor solution or rubbing with medicated teat wipes.



Strip onto a dark surface

Stripping onto a black or dark surface e.g. strip cup, dark RMT paddle, black plastic helps improve the ability to see clots and discoloured milk. Comparing between quarters in the same udder is helpful to spot discolouration.



See [Healthy Udder - Find 1](#) for tips on foremilk stripping cows

Use of RMT and hand-held meters

Sometimes visible changes are not obvious in the milk. A Rapid Mastitis Test (RMT) or a hand-held conductivity meter can help you find cows with mastitis that require:

- A closer examination for clinical signs.
- Retaining in the colostrum mob for an extra 24-48 hours to allow the cow to cure herself or go clinical.



Checking colostrum cows

Check every cow with an RMT before moving her out of the colostrum mob. Only use at the last 1-2 milkings in the colostrum period. Falsely high results can occur if used in the first 24-48 hours after calving.



Only treat cows that show visible clinical signs of mastitis i.e. that persist for three or more strips of milk. All others should be monitored over the next few days for clinical signs of mastitis, unless recommended otherwise by a veterinarian.



Definition of cases that should be treated

A case of clinical mastitis which requires treatment occurs when there is heat, swelling or pain in the udder, or there are changes in the milk (wateriness, clots, discolouration) that persist for more than three squirts of milk.



See [Healthy Udder - Find 2](#) for tips on performing a Rapid Mastitis Test (RMT).

See [Guideline 5](#) for more on setting up hygienic milking practices.

4.3 Collect milk samples for culture to identify the bacteria involved.

Milk culture samples are recommended to help identify which bacteria are involved, if a herd problem emerges.

The right technique must be used to collect samples, otherwise the samples will be contaminated by bacteria from the outside of the teats. Ask your veterinarian to show you the correct technique.

Milk samples can be collected from clinical cases before starting treatments, and stored frozen. A selection of these samples can be sent to laboratory at a later date if:

- Cows are not responding to treatment e.g. more than 20% of cases are receiving a second course of treatment.
- If concerned about the number of clinical cases occurring during calving e.g. exceeding 4 clinical cases in the past 50 calvings.
- If concerned about the number of clinical cases during lactation.



Triggers for action

Use [Mastitis Focus report](#) to compare your herd's clinical mastitis indicators with industry triggers for action.



Collecting good samples requires training

Your vet can train your milking team to use the correct technique to collect milk samples for culture, as described in [Healthy Udder - Find 3](#).

4.4 Follow MRS T. Clearly mark cows to be treated.

Set up a system that works for you and ensure that all regular and relief milking staff are familiar with it.

MRS T is the SmartSAMM recommended way to treat cows.

M-ark: Mark cows the same way every time and make sure all of the farm team know and understand the marking system. Use easy to recognise, highly visual systems.

R-ecord: After marking cows for treatment, record their identity in the animal treatments recording system.

S-eparate: After marking the cows, recording their numbers and milking them, separate out the cows to be treated with antibiotics after milking. Best practice is to keep sick and treated cows in a separate mob and milk last to avoid the risk of contaminated milk entering the milk supply vat, and to minimise the risk of spreading infection to other cows during milking.

T-Treat: Once the cow has been marked, recorded, separated from the herd and milked out, she can be treated with antibiotics.

Systems for temporary identification of treated cows should be highly visible, easy to apply and to remove. The mark should be durable enough to last for the full treatment and withholding period of the drug. Different colours or marking codes may be used to signify when withholding periods are complete.



Clearly identify cows that are to be treated.

Examples of marking systems include:

- Paint (tail paint or non-scourable spray paint) on udder or legs.
- Bands above hocks or on the legs (Velcro or ratchet-type).
- Insulation tape on the tail - avoid tight binding as this can interfere with blood circulation.



See [Healthy Udder - Treat 1](#) for practical tips and instructions for carrying out MRS T and examples of marking systems.

4.5 Follow MRS T. Record all details.

Clinical case records are essential to track mastitis control in your herd, and improve management. Dairy company Quality Assurance programmes require that details of all antibiotic treatments administered be recorded. Legally, milk quality and food safety records should be kept for four years.

A clear, easily seen record should be kept in the farm dairy for quick reference during milking. A blackboard or whiteboard can be helpful.

A more permanent record can be kept by simply recording cases in a notebook or farm diary. For Fonterra suppliers, the Dairy Diary provides a useful place to record such information. On-farm computer systems also make record keeping easy.

SmartSAMM recommends recording details on herd improvement systems to allow regular review of the information and help improve mastitis management in your herd.



The [Mastitis Focus report](#) helps you track mastitis management at calving and alerts you to emerging problems if they occur.



Industry triggers for action

Your herd has a significant problem if there are:

- More than 8 clinical cases per 100 cows in the first month of lactation.
- More than 16 clinical cases per 100 heifer calvings in the first month of lactation.
- More than 1 clinical case per 100 cows milked in subsequent months of lactation.

4.6 Follow MRS T. Separate cows physically from the milking herd before commencing treatment.

Draft out clinical cases and milk them last. This will help reduce the spread of infection to uninfected cows.

Run a separate mastitis herd if you can. Segregating infected cows is an effective tool for reducing the spread of infection.

Use gloves when milking mastitis cows.



See [Guideline 8](#) for more on the use of gloves and segregating infected cows.

4.7 Follow MRS T. Treat with the most appropriate antibiotic as advised by your veterinarian.

Set up an Animal Health and Treatment Plan with your vet, showing which antibiotics you will use during the season. Issues to be considered include:

- Likely causes for clinical mastitis in your herd (which bacteria).
- Which type of antibiotics are to be used.
- Which cows they are to be used on.
- Who will administer the antibiotics.
- Withholding periods of the products available.

Review the effectiveness of the plan on a regular basis. If more than 10% of cases require a second course, reassess your plan with your vet.

In some circumstances, injectable antibiotic may be beneficial. Seek veterinary advice.

NEVER use Dry Cow Treatment for clinical cases. Always read the label on the antibiotic product.



Checking treatment failures

Use [Mastitis Focus](#) to review the number of treatment failures, so long as clinical treatment records are uploaded to your herd test provider.



Administration of intramuscular antibiotics

To prevent carcass downgrades and chemical residue problems:

- All injections must be given into the muscles of the neck.
- Ensure that the maximum volume injected at any site is as per label.

This is especially important for dairy cattle that may be culled within 12 months of treatment. See [Healthy Udder - Treat 2](#) for the correct way to give intramuscular injections.

4.8 Administer the treatment as recommended.

It is important that teats are cleaned thoroughly before infusing antibiotic. Remember to:

1. Clean up hands or gloves
2. Strip out the quarter fully
3. Scrub the end of the teat with medicated teat wipes (or 70% alcohol) before inserting the tube
4. Disinfect the teat afterwards.

Only treat the quarters that are affected. Check all quarters every milking during the full course of treatment, in case other quarters require treating for clinical mastitis at the same time.



The partial insertion technique

Consider using this technique when giving treatment. By inserting only the first 3-4mm of the antibiotic tube into the teat canal, less damage is caused to the teat canal.



See [Healthy Udder - Treat 3](#) for the correct way to give intramammary treatments.

See [Technote 4](#) for more information on the partial insertion technique.

4.9 Use the full course of antibiotics (as specified on the label).

Complete the full course of antibiotics to reduce the risk of antibiotic resistance.

Avoid any 'off label' use unless directed by your veterinarian.

4.10 Milk the quarter out fully at least every milking.

Stripping out infected milk from clinical quarters can improve cure rates. Frequent stripping (three or four times per day) removes infected milk from the quarter.

Sometimes your veterinarian may recommend the use of Oxytocin, the let-down hormone, to help with treatment of hard, swollen quarters.



See [Technote 4](#) for more on supportive treatment.

4.11 Observe withholding times for milk and meat.

Read the label of the drug used and calculate the correct withholding period for each treatment.

Make sure the date when milk can be returned safely to the vat is obvious to the milking team e.g. on the farm dairy whiteboard and in the shed diary. The Fonterra Dairy Diary provides a useful place to record such information.

If milking cows once a day, use products registered for once daily milking.

4.12 Discard milk from all quarters of cows that receive treatment.

Some antibiotic will be absorbed into the bloodstream and passed out in the milk from the normal quarters. The risk of antibiotic contamination is too great to include it in the vat.

4.13 Consult your veterinarian for advice if a clinical quarter fails to respond by the end of a full course of treatment.

If clinical signs have not resolved by the end of the withholding period, consult your vet for advice about the following options:

- Repeating or extending the same treatment.
- Trying a different antibiotic.
- Culturing the pre-treatment sample or re-sampling the quarter after a minimum of 21 days has elapsed since the last treatment.
- Drying off the quarter (provided it is not hot or swollen).
- Drying off the cow.
- Culling the cow, after the withholding period for meat has expired.

Do not use drugs in any way other than specified on the label. Don't change the dose rate or dose frequency specified on the label. This will change the withholding period required.

If culling the cow, check that the withholding period for meat has elapsed for all drugs used.



Drying off a quarter

If drying off a quarter, just stop milking it. Monitor the quarter to ensure it does not become hot and swollen. If it does, strip it out again.



Do not use DCT

Do not use antibiotic DCT (Dry Cow Treatment) in a quarter when you are continuing to milk the other quarters. Dry Cow Treatments are not registered for use in lactating cows. Some antibiotic will be absorbed into the bloodstream and passed out in the milk from the normal quarters, so there is a high risk of antibiotic contamination of the vat.