

Name/Farm: _____ Date: _____

1. Establishment of Goals for Udder Health

- Set realistic targets for average herd somatic cell count (SCC) or linear score and clinical mastitis rate.
- Review goals on a timely basis, with input from the Herd Udder Health Advisory Team (veterinarian, producer, herd manager, milking personnel and advisors).
- Prioritize management changes to achieve stated goals.
- Other: _____

- Any teat disinfectant should be selected based on documented efficacy data which can be found on the NMC website (www.nmconline.org).
- To optimize mastitis control and reduce costs, teat dipping is preferred to spraying as the method of disinfectant application.
- Milk cows with confirmed contagious intramammary infections last.
- Other: _____

2. Maintenance of a Clean, Dry, Comfortable Environment

- Ensure proper stall usage by ensuring adequacy of stall size and design and provide adequate space in loose yards for the number of cows housed.
- Maintain clean, dry, and comfortable stalls and yards through appropriate bedding management.
- Keep cow traffic areas clean and dry.
- Ensure ventilation system is functioning properly.
- Ensure cows at pasture have uncontaminated lying areas.
- Control detrimental environmental influences (heat stress, frostbite, stray voltage, etc.).
- Ensure that cows remain standing after milking (provide fresh feed and water).
- Other: _____

4. Proper Maintenance and Use of Milking Equipment

- Install or update equipment to ISO 5707 (International Organization for Standardization, "Milking machine installations—Construction and performance").
- Service, maintain, and regularly evaluate equipment function according to manufacturer's guidelines, using dynamic evaluation methods and an appropriate record form.
- Replace liners and other rubber and plastic parts regularly, according to manufacturer's guidelines.
- Replace broken or cracked inflations and short milk tubes immediately.
- Thoroughly wash and sanitize equipment after each milking.
- Other: _____

3. Proper Milking Procedures

- Examine foremilk to facilitate early detection of clinical mastitis and proper milk letdown.
- Ensure teats are clean and dry before milking.
- If local regulations allow, apply pre-milking teat disinfectant that completely covers the teat skin and allow it to remain on teats for at least 30 seconds then dry teats using a properly washed and disinfected cloth towel for use on one cow, or a single service paper towel.
- Wear clean gloves during the milking process to limit spread of contagious pathogens.
- Attach teat cups squarely and level with the udder within 90 seconds of udder preparation.
- Adjust cluster during milking to prevent liner slips and squawks.
- With manual removal, avoid machine stripping and shut off vacuum to the claw before removing cluster.
- Apply teat disinfectant immediately following teat cup removal, and assure complete coverage of teats.

5. Good Record Keeping

- For each case of clinical mastitis, record cow identification, date detected, days in milk, quarter(s) affected, number and type of treatments, outcome of treatments (i.e. return to normal milk, time to discard milk) and the causative bacterial pathogen if a sample was cultured on-farm or in a laboratory.
- Use a computerized or manual record system to manage information, such as individual cow SCC data, on the prevalence and incidence of subclinical mastitis.
- Other: _____

6. Appropriate Management of Clinical Mastitis During Lactation

- Develop and implement a herd clinical mastitis treatment protocol with the Herd Udder Health Advisory team.
- Carefully consider the economic ramifications of therapy decisions.
- Collect a pre-treatment milk sample aseptically for microbiological culture so that antimicrobial susceptibility tests can be used when appropriate.

- Use an appropriate therapeutic regimen; use drugs according to the protocol, or as recommended by the health advisors.
- Prior to infusion, disinfect the teat with a germicide and scrub the teat-end with an alcohol swab.
- For infusion of intramammary antibiotics, use a single-dose, regulatory approved product by the partial insertion method.
- Do not treat chronic non-responsive infections.
- Observe the correct withdrawal period for the antibiotic used, as stated on the label. If extra-label drug use is necessary, follow regulatory guidelines under the supervision of a veterinarian (i.e. in the systemic treatment of coliform mastitis).
- Always follow recommended drug storage guidelines and observe expiration dates.
- Clearly identify all treated cows, and record all treatments in a permanent record.
- When necessary, test milk for inhibitory substances before consignment.
- Other: _____

7. Effective Dry Cow Management

- Decrease the energy density of the ration during late lactation to reduce milk production before dry-off.
- Dry cows off abruptly and dry treat each quarter immediately following the last milking of lactation.
- Disinfect teats and scrub the teat-end with an alcohol swab before infusing.
- Treat all quarters of all cows with a commercially available approved [long-acting] dry-cow antibiotic and/or an approved internal teat sealant.
- Use the partial insertion method of dry treatment infusion.
- Disinfect teats immediately following infusion using any approved post milking disinfectant teat dip.
- Provide adequate dry cow nutrition to enhance immune system function.
- Maintain a clean, dry, comfortable environment for dry cows. Dry cow environmental management is important to minimize exposure to pathogens.
- In situations of high environmental pathogen exposure, use an internal or external teat sealant for dry cows in addition to any antimicrobial product.
- In herds with coliform mastitis problems, vaccinate with a core antigen endotoxin vaccine following manufacturer's directions.
- Clip flanks and udders to remove excess body hair. Udder singeing may be useful to ensure hair removal.
- Other: _____

8. Maintenance of Biosecurity for Contagious Pathogens and Marketing of Chronically Infected Cows

- Request bulk tank and individual cow SCC data. For suspect animals, further diagnostic efforts may be indicated to identify cases of subclinical mastitis prior to purchasing cows.
- If possible, obtain aseptically collected milk samples for bacteriological culture from cows prior to purchase.
- Isolate recently purchased cows, and milk separately, until there is assurance of the absence of intramammary infection.
- Segregate cows with a persistently high SCC or linear score (i.e. SCC greater than 200,000 or linear score greater than or equal to 4.0 for several months) and observe response to dry treatment or other recommended therapy.
- Market or permanently segregate cows persistently infected with *Staphylococcus aureus* or other non-responsive microbial agents (*Mycoplasma*, *Nocardia*, *Pseudomonas*, or *Arcanobacterium pyogenes*).
- Consider udder health status of first-calf heifers as this can impinge on herd biosecurity.
- Other: _____

9. Regular Monitoring of Udder Health Status

- Enroll in an individual cow SCC program or use some other monitor of subclinical infections.
- Use a sensitive cow-side monitor of inflammation in cows suspected of infection and in high risk periods (i.e. early lactation).
- Monitor distributions of high SCC cows, and rates of change to elevated SCC.
- Conduct milk bacteriological culture of clinical cases and high SCC cows regularly.
- Monitor udder health for the herd using reports from the regional regulatory agency or milk marketing organization and DHI.
- Calculate clinical mastitis rates and distributions regularly, paying particular attention to infections in heifers.
- Use SCC and clinical mastitis records to evaluate protocols, and to make treatment and marketing decisions.
- Other: _____

10. Periodic Review of Mastitis Control Program

- Obtain objective evaluations from veterinarian, industry field person or extension representative.
- A step-by-step approach to the review, and a standard evaluation form are useful.
- Make use of the entire Herd Udder Health Advisory Team: veterinarian, producer, herd manager, milking personnel, and advisors.
- Other: _____