

# General Concepts in Transition Cow Management

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## Abstract

Proper management of transition cows is critical for many reasons. The success or failure of the transition program impacts health, productivity, reproduction and profitability in the subsequent lactation. Proper management of transition cows requires a clear plan for both routine and less common situations, a means to implement the plan, and a method of monitoring the implementation of the plan and the results of the program.

## Introduction

Management of transition cows is critical for many reasons, including health, productivity, and longevity. The preventable economic losses from failures in a transition cow program are significant. Proper management of transition cows requires a clear plan for both routine and less common situations, a means to implement the plan, and a method of monitoring both the implementation of the plan as well as the results of the program.

The transition period is the time of greatest occurrence of common health difficulties during a cow's lactation cycle. These health problems arise from metabolic disorders as well as infectious agents. In addition to acute clinical disease, it is the time of greatest risk for establishment of chronic conditions such as subclinical mastitis and laminitis. These early lactation disorders have a major impact on future productivity, on the risk of premature culling, and on the success of future reproductive performance. Transition period management can also affect future productivity and reproductive performance beyond the negative effects of disease. Finally, transition period management has effects on genetic progress arising from calving management and immediate neonatal calf care.

This paper will outline some general areas of concern for transition cow management. These areas are not unique to the transition period, but the transition period perhaps does require more intensive management than other times in the lactation cycle of a cow. The presentation will contain more specific examples (good and bad) of transition cow management based on the

authors' experience in managing a transition cow facility calving about 2,500 animals per year.

## Transition Management Goals

Too often, veterinarians and other consultants view transition management as either the computer formulation of a close-up cow diet, vaccination with various products, a program of taking temperatures of fresh cows, a cookbook of hormone and antibiotic injections, or calculation of peak milks every three months. While all of these may or may not have roles to play, none of these can be considered a comprehensive management approach to the transition period.

Transition cow management must place emphasis on the following:

- Maintaining excellent health (both in the short term and over the long term)
- Preserving the production potential present in the animal
- Providing a high degree of comfort (lying spaces, ventilation, feed areas, etc)
- Ensuring a high degree of animal well-being and general animal welfare
- Maintaining a high degree of cleanliness in cattle and environment
- Minimizing sources of handling stress
- Minimizing negative impacts of manure handling and storage on environment
- Minimizing the risks of food residues and food pathogens
- Providing a safe working environment for employees

Since commercial dairies are economic entities, all of the above must be accomplished in a cost-effective manner. On the other hand, "cost-effective" should not be interpreted as least cost nor can it be used as an excuse for animal or human abuse.

Excellent transition cow management arises from a combination of:

- Proper physical facilities
- Calm approach to cow handling
- Animal and environmental cleanliness
- A focus on all aspects of cow comfort

- Appropriate intervention in the calving process
- Proper diet formulation and excellent feeding management
- Clear, logical protocols and adequate training of personnel
- A sensitive monitoring system to allow early detection of problems

### Proper Physical Facilities

Proper physical facilities need not be new or expensive. However, in many cases the physical layout will dictate the means and effectiveness of delivery of management tasks. Whenever possible, function should dictate design during new building or remodeling projects, rather than the reverse. Making a comprehensive list of tasks to be performed and carefully outlining the steps to perform these tasks can be very enlightening. One should not be surprised when labor can not or does not perform the expected tasks properly if they are faced with difficult or impossible layouts.

One of the goals for physical design should be that any cow in the barn can be moved easily by a single person from one spot to any other spot in the barn in a calm, quiet, efficient manner. There must be a clear plan on the location where each task is to be performed and a clear means of moving the cow to the area where the task is to be performed. In many cases some simple gating setups can greatly assist in implementation of these tasks.

### Calm Cow Handling

Calm cow handling is influenced by physical layout. More importantly, there must be clarity from top management down concerning the importance of handling the cattle in a calm and quiet manner. There is almost never a reason for any animal to run in front of a human or a human to run or yell. Actual physical abuse of an animal must be considered grounds for immediate dismissal.

Having the personnel walk through cattle several times a day serves the purpose of checking for problems. Walking the pens also allows the cattle (especially springing heifers) to become very accustomed to the presence of humans. Humans (even strangers) should be able to walk down alleys or in front of cows at the feedbunk without the animals abruptly shying away. Also, moving animals through the parlor several times before freshening can pay large dividends in early lactation.

### Keeping the Cow and Her Environment Clean

Keeping the cow clean pays dividends in mastitis control and uterine infections. Management of the environment in a manner that maintains and promotes cleanliness is important. The focus on cleanliness must include

any area where the cattle lie down, walk through, or otherwise have access. In addition, there should be a plan to clean up dirty animals.

Areas to be addressed in the environment include:

- Lying space bedding in freestalls
  - Depth of bedding maintained to ensure usage
  - Leveling of bedding
  - Regular manure removal from rear of freestalls
  - Design of freestalls
- Cleanliness of calving areas. Best case for cleanliness is individual calving pens, with cows spending only a few hours in a pen and cleaned between cows
- Areas where cows walk must not have any accumulation of manure or liquid

Soiling can also be minimized or lessened by addressing the cows:

- Removal of hair from udders several times before freshening
- Removal of excessive body hair
- Power washing to remove excess hair and dirt

### Focus on All Aspects of Cow Comfort

Cow comfort is one of the buzzwords in the industry. Transition cows need to be managed in a manner that ensures excellent cow comfort. Typically, though, the discussion about cow comfort begins and ends with the freestall bed. Cow comfort encompasses much more than choice of bedding. It should include the following:

- Design and management of freestalls
- Forward and side lunge space
- Divider design
- Neck rail placement
- Brisket board size and placement
- Bedding
  - Choice of material
  - Depth of material
  - Removal of manure and other soiling
  - Leveling schedule
  - Refilling schedule
- Design and management of ventilation in all areas of barn
- Design and management of heat stress reduction systems
  - In feeding and resting areas
  - In holding area and parlor
- Design and management of surfaces in alleys and any area cattle move through
  - Proper finishing of concrete
  - Proper grooving of concrete
  - Rubber matting where possible
  - Elimination of ice and other potential hazards for slipping

- Design, location, and management of access to feed
- Design, location, and management of watering spaces
- Design and management of lockups or other restraint means
- Design and management of calving areas
- Design and management of parlor and holding area comfort issues
  - Degree of time spent in milking process
  - Footing in holding area and parlor
  - Cushioning while standing in holding area and parlor
  - Free from injury potential
- Social stressors such as pen moves and overcrowding

### **Appropriate Intervention in the Calving Process**

The calving process can be quite stressful and/or injurious to the animals. On many dairies (especially new dairies), the personnel tend to intervene too soon and too aggressively. It is very tempting to intervene more quickly if there has been an increase in stillbirths. However, this has the potential to cause more physical injury to the adult animals and may not decrease the stillbirths. It can be quite frustrating to fully diagnose the causes of stillbirths, but it is logical that sound husbandry practices should be in place prior to pursuing other causes.

An atmosphere encouraging patience is essential. While it would be quite useful to set an absolute time limit from the start of the calving process to an intervention, it is actually difficult to define this time interval. Personnel must be trained to recognize both normal and abnormal situations and make the appropriate responses.

Calm handling of the animals can greatly reduce the degree of difficulty and speed the calving process. When intervention is needed, there needs to be a very low stress means of being able to do a quick, clean check of the cow. Additionally, there needs to be a way to give the animal additional assistance as needed. Cleanliness is critical, both from a bedding point of view and from a thorough cleaning of the vulvar area prior to and during any examination or assistance. Having hot water available and a location to clean up equipment near the calving area helps promote the concept of cleanliness and makes it more likely that employees will make the effort to maintain cleanliness.

### **Proper Nutrition and Excellent Feeding Management**

The nutrition of the transition cow has been discussed extensively but, compared to lactating cow nutrition, there is still much disagreement among experts

as to the proper approach. In the field, there have been both failures and successes with several quite different approaches. No matter the approach taken, two critical factors are keeping the animals eating well throughout the entire transition period and maintaining excellent rumen function by retention of an adequate rumen fiber mat.

In many cases, the problem may not lie with the computer formulation. Rather, improper feeding management may cause problems. Feeding management areas that must be addressed include:

- Proper removal of feed from storage
- Proper mixing
  - Correct ingredients
  - Correct amounts
  - Avoidance of under- or over-mixing
- Proper delivery
  - Correct cows
  - Adequate amounts of feed
  - Predictable time of delivery
- Regular pushups and removal of spoiled feeds from feedbunk

### **Clear, Logical Management and Treatment Protocols and Adequate Training of Personnel**

There have been many articles in the popular press about developing protocols for various management tasks and for treatment of diseases. Unfortunately, there has sometimes been the impression that merely writing out flowcharts and placing them in a binder was sufficient to ensure management success. These binders typically end up merely collecting dust on the dairy's shelf.

Nevertheless, there is a great deal of value in the process of carefully deciding the proper steps for a given task or situation. It can reveal that tasks are not being performed adequately because the task is more complicated than it needs to be, the materials needed to perform the task is not readily available, adequate training has not been conducted, or the physical layout does not lend itself to the task.

There are several steps involved if protocols are to be used successfully:

- The initial plan must be clear, logical, and have some chance for success
- Initial training of employees for all expected tasks
- The protocol must actually be implemented
- Monitoring for the desired outcome must be done on an ongoing basis
- Equally important, monitoring for procedural drift must be done on an ongoing basis
- Periodic review for improvement or change must be performed.

Of the above steps, the most difficult to control is the tendency for procedural drift over time. There are countless examples of dairies radically changing their approaches to management based on the perception that the protocol itself was flawed, but in reality the actual performance no longer remotely resembled the original plan.

Personnel cannot be expected to perform tasks correctly unless they have received clear instructions on how the tasks are to be performed. However, seldom is the initial training sufficient. Constant retraining is necessary. This need not be viewed as punishment; rather, it can become an opportunity for the employee to offer valuable input back to management to improve the outcomes.

### **A Sensitive Monitoring System to Allow Early Detection of Problems**

The concept of performance monitoring on dairy farms has been discussed extensively. Most of these discussions have centered around periodic (monthly, quarterly, yearly) measurements and assessments by outside consultants and other third parties, including nutritionists, veterinarians, and lenders. While these programs have added much value to dairy operations, they are not sufficient alone to routinely ensure continuing success.

To increase the possibility of success, programs need to incorporate the cooperation of the on-site daily management and labor employees in the design, implementation, and ongoing monitoring of a clear, logical plan. This can be called *managerial monitoring*.

Managerial monitoring is performed on an ongoing basis. It involves at least these areas:

- Cow observation and examination (visual, manure, locomotion, screening exams, eating behavior, cleanliness, social interactions)

- Feeding management (feed, feed mixing and delivery, feedbunk, water)
- Freestall bedding (depth, leveling, cleanliness)
- Cow environment (ventilation, cooling)
- Parlor (cow prep, equipment settings)
- Review of all data, including computerized and paper records

Examples using the managerial monitoring approach will be shown in the presentation. One important point on the cow observation and examination would be that, while screening physicals may be useful, most of the cow observations are done visually without touching the animals. Much more information can be gathered using these methods, but the management must be disciplined enough and dedicated to the tasks in order to keep the system functioning. It is tempting for the owners to consider the task of quietly watching the animals as “wasting time”. It is also counter to the training of veterinarians to not immediately grab a thermometer, stethoscope, and rectal sleeve and descend like seagulls on the one sick cow while ignoring all the rest of the cows.

### **Summary**

Because the transition period is such an important time in an animal's lactation cycle, management needs to be quite focused on providing the best care to these animals. Designing and delivering a successful management plan requires a full understanding of the desired outcomes, a complete appreciation of the details of each required task, a true desire to provide for the health and welfare of the animals, and an ability to formulate, implement, and maintain a logical plan to achieve the goals.