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Managerial Monitoring of Transition Cow Programs Lessons Learned in 2002 at the TMF

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Introduction

The “transition period” for a dairy cow is usually considered to be from three weeks prior to calving to three weeks after freshening. Proper management of a cow’s transition from a non-lactating state through calving and into early lactation is critical for several reasons, including health, productivity, and longevity. Proper management of transition cows requires a clear plan for both common and more rare situations, a means to implement the plan, and a method of monitoring the implementation as well as the results of the program. This paper will discuss some aspects of a monitoring program for transition cows from a managerial viewpoint.

Background

The transition period is the time of greatest occurrence of common health difficulties during a cow’s lactational 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 infections such as subclinical mastitis and laminitis. These early lactation disorders have a major impact on both future productivity and in determining the risk of premature culling. Transition period management also has impact on productivity beyond the negative effects of disease. Finally, transition period management has effects on genetic progress arising from calving management and immediate neonatal calf care.

In March of 2002, construction was completed on a specialized Transition Management Facility (TMF) located in Emerald Wisconsin. The TMF is a unique partnership between a commercial dairy operation and the University of Minnesota’s College of Veterinary Medicine (UM-CVM). The TMF project has been a focal point of effort of the Center for Dairy Health, Management, and Food Quality at the UM-CVM in the year 2002. It is a key part of the Center’s efforts to help the CVM achieve its mission of teaching, outreach, and research.

One interesting aspect to the TMF project is the lessons learned by the UM-CVM in the area of information management and monitoring transition cow programs. The partnership at the TMF has required faculty to be very concerned with the challenge of the *how to* part of the monitoring process. This paper outlines the monitoring approach used by the management at the TMF and the 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 at the TMF.

Managerial Monitoring Defined

Monitoring on a dairy can be defined as the routine, systematic collection and evaluation of information from the dairy. It is intended to assess current status, detect recent changes, identify

problems, and to track performance over time. For modern commercial animal agriculture, the tracking of performance includes the tracking of both financial performance as well as the biological performance of an operation.

Financial performance is tracked to allow management to determine how to allocate financial resources in the short-term and to choose the proper capital investment over the longer-term. Financial records are necessary for any business in the area of tax strategies and tactics. Agricultural lenders use financial performance to assess credit risk of a particular farm operation.

Biologic performance is used by farm managers to make decisions on how to allocate labor and feed resources on an on-going basis. It also has an important role in longer-term planning of herd management strategies and tactics.

Production medicine programs are always considering both financial and biological impacts, since these two areas are inextricably linked together in animal production agriculture. As herd health veterinarians, we were trained to focus on the biological performance of the dairy cow. As production medicine veterinarians, we have learned that our herd health recommendations must also consider the impact on the financial performance of our clients operations.

Financial consultants are quick to point out the difference between Financial Accounting and Managerial Accounting when working in the area of business financial records.

Financial accounting is typically utilized by owners and their consultants. The focus is on optimizing the return on a businesses financial investment. Its goal is to determine business performance over the long-term. Outside standards must exist for uniformity in tax reporting records.

On the other hand, front line managers do not monitor their daily operations on the basis of the same financial reports as bankers or tax accountants. This would not allow them to respond quickly to emerging problems. However, this does not mean they ignore financial impacts of their decisions. Rather, they must utilize managerial accounting where the focus is making better operational decisions. The goal of managerial accounting is the determination of the proper allocation of financial resources over the short-term. It is by making the best short term operational decisions that front line managers have an important contribution to make towards the long-term financial success.

Similar to how financial performance is divided into two categories, the biological performance tracking can be divided into performance assessment and managerial monitoring. As production medicine consultants we need to understand that the distinction between these two types of monitoring.

Biologic performance assessment is utilized by owners and consultants. Its purpose is to determine a dairy's biologic performance level over time. The focus is on a comparison to industry benchmarks of dairy performance.

Managerial monitoring is utilized by dairy managers and their herdsman level people. Its purpose is to identify problems as soon as possible. The focus is on making better day-to-day operational decisions.

The purpose of monitoring is to identify areas on a dairy that can be changed. If the change is implemented successfully, the profit of the operation is enhanced or risk is reduced. Getting a recommendation implemented successfully is not a simple challenge on any dairy. Practitioners that market dairy production medicine services to their clients need to become very focused on the successful implementation of managerial monitoring. The process of managerial monitoring is the primary driver of successful implementation.

Managerial Monitoring of Transition Cow Programs

Monitoring the transition cow program is important because positive changes in this management area of a dairy can have a widespread impact on the entire dairy operation. The preventable economic losses from failures in a transition cow program are significant. They involve both short and long-term effects – on milk yield and components, on disease incidence and severity, on subsequent reproductive performance, and the associated labor and treatment costs. Excellent transition cow management arises from a combination of:

- Proper physical facilities
- Calm cow handling
- Keeping the cow and her environment clean
- Focus on all areas of cow comfort
- Appropriate intervention in the calving process
- Proper nutrition and excellent feeding management
- Logical management and treatment protocols, coupled with adequate personnel training

The manager of a transition cow program needs to pay attention each of these areas on a daily basis. The goal of managerial monitoring is to provide useful information based on data that has been accurately collected and recorded. The purpose of monitoring is to allow front line managers to detect changes or new problems accurately and rapidly. These changes can be the result of planned interventions or quite commonly are due to the myriad of unintended changes that occur every day on most dairies.

The correct response to a detected change in a managerial monitoring report can vary quite a bit from dairy to dairy. This is because each dairy is a business with a unique set of circumstances. Dairies have varying resources available to them, as well as various constraints (either internal or external) that are placed upon them. The production medicine veterinarian can be a part of a collaborative effort with the on-farm management to make a decision on what the best course of action to take is.

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, or a program of taking temperatures of fresh cows, or the routine use of oral drenches. While all of these may have roles to play, none of these can be considered a comprehensive management approach to the transition period.

Transition cow management should place emphasis on all of 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 well-being and high regard for general animal welfare
- Maintaining a high degree of cleanliness
- 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 an excellent environment for its employees

All of the above must be accomplished in a cost-effective manner. However, “cost-effective” should not be interpreted as least cost nor can it be used as an excuse for animal or human abuse.

Areas to Manage in a Transition Cow Program

Proper Physical Facilities

Proper physical facilities need not be new or expensive. However, too often 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 list of tasks to be performed and carefully outlining the steps to perform these tasks is often 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. Often, some simple gating setups can greatly assist in implementation of these tasks.

Calm Cow Handling

Calm cow handling is influenced by physical layout. However, 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. However, it 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 needs to 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 through 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. However, too often 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 where cattle move through
 - Proper finishing of concrete
 - Proper grooving of concrete
 - Rubber matting where possible
 - Elimination of ice and other potential reasons 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

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 intervene too soon and too aggressively. (Veterinarians may actually be the most guilty.) It is very tempting to intervene more quickly if there has been an increase in stillbirths.

An atmosphere encouraging patience is essential. While it would be quite nice to set an absolute time limit from the start of the calving process to an intervention, it is actually difficult to set up a tightly defined time interval.

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 here – both from a bedding point of view and from a through 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; however, 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 of the most 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 has been much interest 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. Too often these binders are merely collecting dust on the dairy's shelf.

However, there is a great deal of value in the process of carefully deciding the proper steps for a given task or situation. It often reveals 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
- Training of employees to any needed tasks needs to be performed
- The protocol must actually be implemented
- Monitoring for the desired outcome must be done on an on-going basis
- Equally important, monitoring for procedural drift must be done on an on-going 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 the reality was the actual performance no longer remotely resembled the original plan.

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

Summary

Since 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 deep understanding of the desired outcomes, a full 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.