
Herd Health Incentives



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All of the areas on the dairy are interrelated and can have effects on cow health and herd performance. It should be emphasized that every individual on the farm plays a vital role in contributing to herd health and performance. Performance can be measured in pounds of milk, milk fat and protein production per cow, reproductive performance, and heifer growth or age at first calving. Health can be measured by calculating disease

incidence. This chapter will highlight some of the more important areas in which employees can impact overall health of the herd which can affect herd performance.

Most employees on the dairy really do want to do a good job. They like the cows and want to help them. What is often missing, however, is the training to provide the knowledge of the best herd health practices and the *reasons* why those practices are the best ones to

improve the health of cows. Adequate and proper training should be the first step to the management of the health of the dairy herd.

What are the herd health areas for which the employees have direct responsibility? Employees can be responsible for implementing vaccination programs, transition cow management, maternity pen and calving management, fresh cow management, hospital pen management (including treatment), and environmental management. Each of these areas requires attention to details to be effective. A path analysis model to represent the complex of influences of

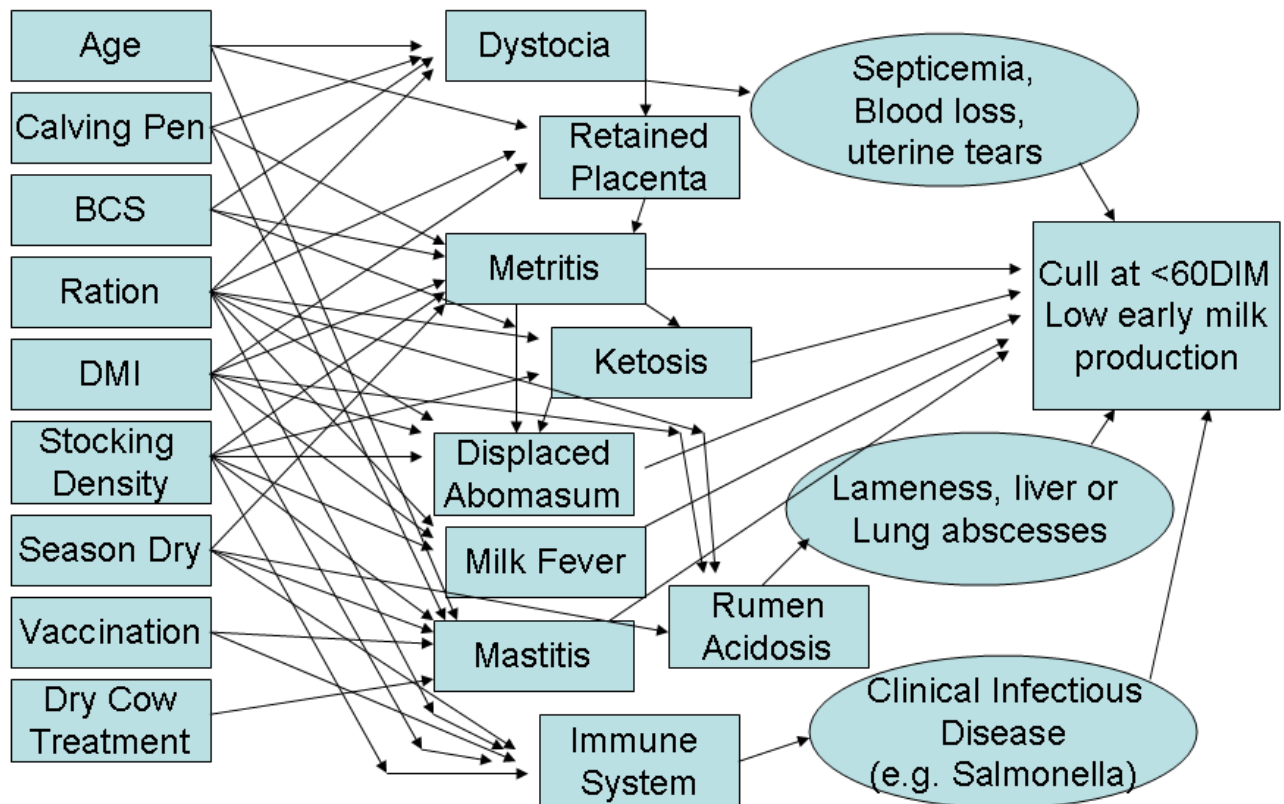
many of these areas on health and performance in early lactation is given in Figure 1.¹⁻³

VACCINATION OF HEIFERS AND COWS

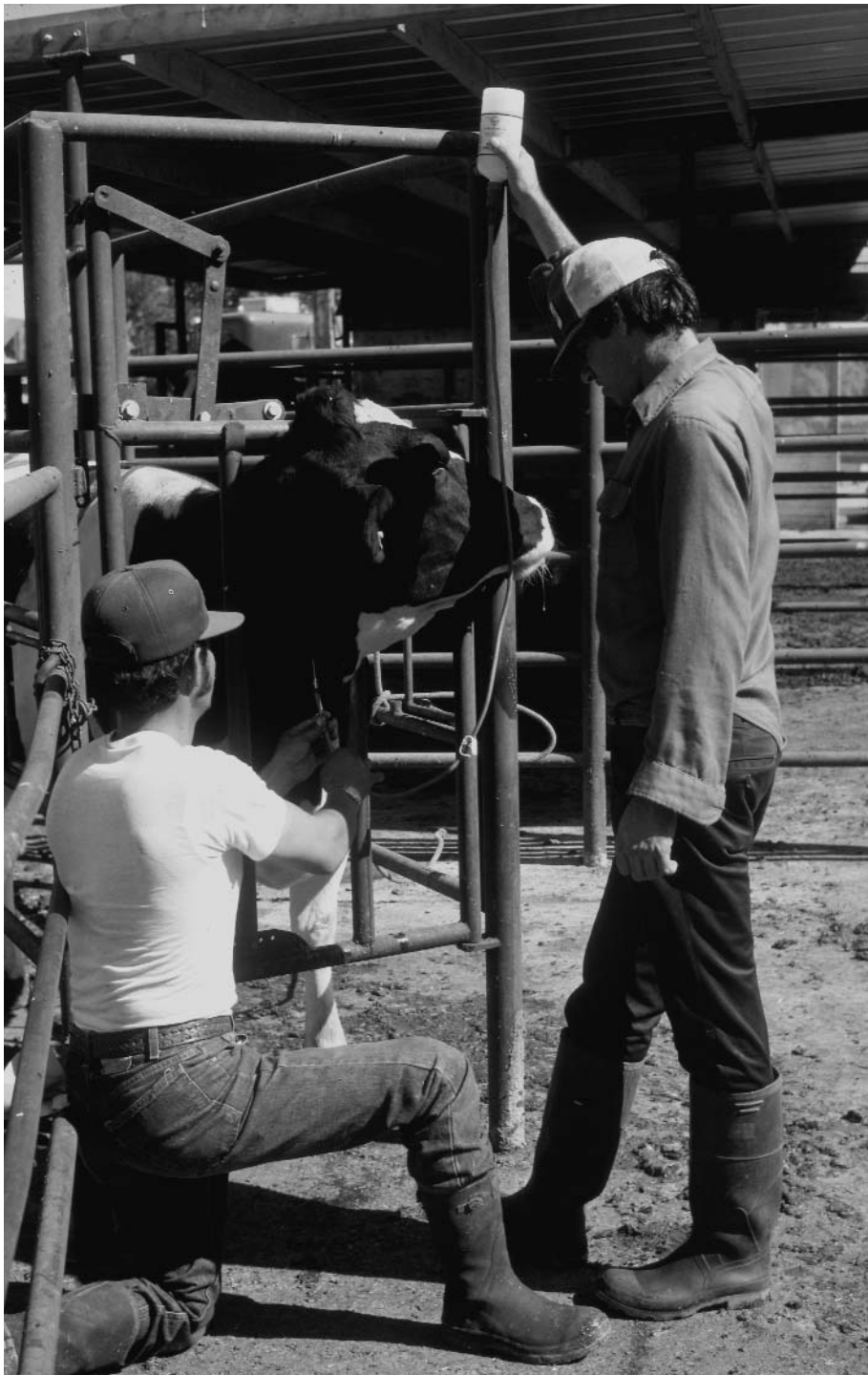
Sound herd vaccination programs are essential for the health of cows and heifers and for the prevention of a number of infectious causes of abortion. Employees are often asked to perform vaccinations of all heifers and cows but often lack knowledge of some of the details to make these tasks effective at reducing the chances of disease. Vaccination programs require the

Figure 8-1. Path analysis for dry cow management and metabolic disease effects on early lactation culling (<60 DIM) and early lactation milk production.

Close-Up Pen Factors



(Adapted from Erb et al. 1985; Curtis et al. 1985; Correa et al. 1990)



Gregorio Billikopf

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knowledge of who to vaccinate, when to vaccinate, where to vaccinate and how to vaccinate. The herd veterinarian can craft a comprehensive vaccination program for the herd and make recommendations about what vaccines should be used specifically for the herd. What the employee then needs is training on handling the vaccine (proper storage with no freezing, nor heating nor

leaving on the dashboard) so that it remains an effective stimulus to produce immunity; the proper dose of vaccine to provide enough of a stimulus to produce immunity; and the correct route of vaccine administration. All these aspects of vaccination are on the vaccine package inserts. Providing the training on how to read the insert or providing language-appropriate label directions is



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No one employee is solely responsible for herd health. It requires a team effort.

paramount to effective vaccination.

Incentives for getting the job of vaccinations done correctly have not been developed. If a producer paid incentives for the proportion of the herd vaccinated, it could make a difference, but monitoring this is very difficult. Counting the doses of vaccine used does not mean that they were actually given to the cows and heifers. An objective measure on which to base incentive pay is hard to find.

TRANSITION MANAGEMENT

A good transition from the dry period into early lactation can prevent numerous health and production problems later on. There are very specific areas in which employees have an influence. This section will focus on the period from dry off through the fresh pen. Areas to monitor and possible incentives will be provided at the end of the section.

Dry cow management

Dry cows are rarely “managed” other than providing dry cow treatment at dry off. Once put into the dry pen, they are left on their own. Critical areas to pay attention to, however, are corral management to provide cows with clean, dry resting areas, thereby

reducing chances of new intramammary infections; dry cow nutrition; and identification and movement of cows to the close-up pen three weeks before calving.

Close-up cows

Cows in the close-up pen are there for several reasons. First, they are moved so as to receive a transition diet that prepares their rumens for the lactating cow ration by providing substrates that elongate rumen papillae, and giving them a lead-time to adapt to new feedstuffs. Second, they are separated from other cows, and hopefully not overcrowded, so that they can eat more feed because they naturally start to decrease intakes in the two weeks before calving. And, third, many close-up cows are fed anionic salts in their diet for prevention of milk fever and subclinical hypocalcemia. Stocking density, dry matter intakes, and anionic salt feeding are areas that can be monitored.

Every week the cows are in the close-up pen, an employee can obtain urine samples from ten close-up cows that have been in the pen for at least two days. Recommendations are to have urine pH's in the 6.0-7.0 range. This information should then be provided to the feeder, nutritionist or veterinarian if changes to the diet need to be made.

In addition to pH monitoring, employees need to recognize that maximization of feed intake through estimation of dry matter intake and frequent feed push-ups is essential in the close-up pen. Employees can provide information on the weight of the feed, numbers of cows in the pen and the pounds of feed refusals so that dry matter intake can be estimated and improved. The final stage in close-up pen management is to have employees able to recognize the signs of imminent pregnancy and know when to move cows to the maternity pen.

Maternity pen and calving management

Maternity pen hygiene, allotment of the appropriate space per cow, and

comfort (bedding) are essential ingredients in effective maternity pen management. Calving management guidelines to reduce risk of injury or infection to cows or heifers can be provided to employees through “calving schools” conducted by the herd veterinarian. Training should include identification of calving problems, delivery techniques, and when to call for veterinary assistance. Employees should also be able to perform rudimentary physical examinations after calving to check for uterine or vaginal tears and assess overall cow health. An incentive that some producers have used is one based on the proportion of live calves at birth (or a reduction in stillbirths). This could have a bad consequence, however, because it could result in the employee deciding on earlier, unnecessary calving intervention that could cause more uterine and vaginal tears, infections, abscesses or downer cows. Targets for live calves between zero and 24 hours of age are <6-8% of all births, with an action level of >10%.^{4,5}

Just-fresh cows

Employees working with these cows need to understand and be able to perform sanitary colostrum harvesting. They need to be able to identify fresh cow mastitis, retained placentas, and assess cows for fevers. Once the cows are milked for 3-4 days, they are then moved to the fresh pen.

Fresh cow programs and fresh cow treatment protocols - Fresh cow monitoring programs are popular in California to detect problems early and initiate the appropriate treatment in order to reduce fresh cow health problems' effects on early lactation milk production and subsequent cow fertility. Producers should work with their veterinarian to develop detection, monitoring, and treatment protocols for specific conditions. These programs usually rely on monitoring signs of illness and rectal temperatures for the first 10 days in the pen.⁶ Employees also need training in how to identify those sick cows that may need further examination and know when to send cows to the hospital pen.

Potential ways to assess the progress of transition cow management include the proportion of cows culled in the first 60 days in milk and early lactation milk production.



In addition to fresh cow treatment programs, employees need to pay attention to fresh cow comfort, hygiene and stocking density. Cows in the fresh pen should not exceed 90% of freestall capacity (stocking density) and at least 35 inches of bunk space per head in the pen. They are still ramping up for peak dry matter intake and need fresh feed often.

Transition cow management monitoring and incentives

Few producers are actually monitoring the effectiveness of their transition program because effective monitors have been elusive. Recently, some new information has provided some hope for making decisions about interventions in transition cow programs. There are three possible areas to monitor that are relatively easy to set up and may provide bases for incentive pay for employees. One caveat, however, is that because of the interrelated nature of transition cow management, multiple employees may be involved in an incentive plan.

Potential Monitors for Transition Cow Programs⁷

1. Proportion of herd removed within 60 days in milk (DIM) - On most dairies, herd removal in early lactation (<60 DIM) is almost always due to death or forced culling because of disease or injury.⁷ The proportion of cows leaving the herd early in lactation can serve as a valuable monitor for transition cow programs. About 25% of all removals leave within 60 DIM (about 6-12% of the entire herd). This represents a tremendous direct economic impact on herd profitability. To use this monitor on which to base incentive pay, the producer must set up the monitor so that distinct cohorts of cows that calve are evaluated for which specific employees had responsibility. A benchmark goal is given as no more than 6-10% of the entire lactating herd removed within 60 DIM. In addition, improvement in documenting the reasons for removal could improve the ability to target specific areas of transition management improvement.
2. Early lactation milk production - Milk production in early lactation is tied to how well cows went through their transition. There are three possible milk production monitors on which to base incentives: peak milk, cohort peak milk and average first test day milk.
 - a. *Peak milk* - This measure is influenced by age, season of calving, as well as genetics of the cow. Average peak milk adds a lot of momentum to the measure because of the time between calving and peak, and the experience of all the cows in the herd.
 - b. *Cohort peak milk* - This measure still has some of the disadvantages of peak milk and requires a special set-up within the farm computerized record-keeping system to extract the data. There is still a lag between what happened around calving and when peak milk occurred, but the measure is looking only a specific calving cohort of cows, e.g. those calving each month.
 - c. *First test milk production* - This measure reduces the lag time from calving, but the amount of milk produced is highly correlated to the days in milk at first test. First test-day milk production may occur anywhere from a few days in milk (guidelines suggest no less than 10 DIM) to over 30 DIM. One recommendation is to look only at a calving cohort of cows that had a first test between 15 to 25 days in milk (M. Overton, personal communication). First test milk production (15-25 DIM) may be the most sensitive and earliest measure of transition cow management.
3. Rates of metabolic disease in early lactation - Measuring monthly rates of diseases associated with transition management and rewarding employees responsible could be a

direct means to provide an incentive for overall transition management. Disease rates within the first 30 days after calving could be calculated for monthly calving cohorts of cows for which the employees had responsibility. Although this sounds straightforward, these calculations are difficult because most producers do not keep adequate health or diagnosis records for sick cows. Although large farms have computerized record-keeping systems for production and reproduction data, they may not capture health data or only record treatments and not the diagnoses. A veterinarian could help set up health event codes that can be appropriately summarized.⁷ A second consideration is that a simple, standard, agreed-upon clinical definition needs to be made for each disease. Another consideration is that the employee who might receive the incentive is not the same one who makes the diagnosis or enters it into the computer. An impartial third-party should be involved. Potential goals for post-calving diseases:

- a. Milk fever, 3-5% of cows calving within 30 days
- b. Retained placenta, 5-8% of cows calving within 30 days
- c. Displaced abomasum, 3-5% of cows calving within 30 days

What is critical is that the producer knows what these measures currently are in the herd so as to establish reasonable, attainable goals.

HOSPITAL COW MANAGEMENT

Maintaining the health of the rest of the herd means isolating and effectively treating cows that are ill or injured. Hospital cow management requires some knowledge of physical examination, recognition of common diseases and a set of treatment protocols. Employees also need to know when to call the veterinarian or producer if they are not seeing treatment success. A close working relationship with the herd veterinarian who can help hospital

pen employees better manage sick cows can result in fewer culls, fewer deaths, and a faster return of cows to the lactating pens.

ENVIRONMENTAL MANAGEMENT

Environmental management includes corral management, to minimize mud and maximize shade and cooling so that cows can utilize nutrients for fetal growth, maintenance and future milk production; water trough sanitation and maintenance; bedding and stall maintenance, to optimize cow comfort; and flush alley systems management, for the timing and frequency of flushing. Incentives for corral or freestall management could be based on observations by an objective third party. For example, the herd veterinarian or other dairy consultant could provide data on cow comfort and hygiene at their regular visits on which incentive pays can be based. This could, however, result in a potentially adversarial relationship between the staff and consultant. [*Editor's note: spot checks on cow comfort and hygiene should take place on an irregular basis, perhaps using a random number calculator to determine the day and time of the day on a rotating basis, else workers may know to increase their efforts on days when the veterinarian or consultant is scheduled.*]

CONCLUDING THOUGHTS

Because of the interrelationships of feeding, milking, reproductive management, and environmental management and the effects that nutrition, lameness, fertility, and mastitis have on immunity and milk production performance of the herd, it may be difficult for the producer to identify specific areas for incentive pay for herd health practices. The employee may not have individual, complete control over the standard measures of herd performance because of these interrelationships. For example, a hospital pen manager can become easily

Effective, meaningful employee training is critical to maintain a healthy, productive herd.



overwhelmed if the milkers have high sensitivity for pulling cows with mastitis for treatment. Or, if the fresh pen manager does not quickly detect and treat fresh cows, more cows will go into the hospital for further treatment.

What will motivate employees to perform optimally in the farm's herd health programs?

* Disease monitoring.

* Specific job goals and specific tasks to reach those goals.

* Adequate training, retraining and reinforcement of what to do and why it is important.

“Hear, see, do, say, and say while doing” will ensure proper training.

* Appropriate and effective feedback based on observations of job performance.

* Adequate animal holding facilities and equipment so that the employee can provide optimum care most efficiently.

* Recognition by management that each detail of what the employee does to maintain or improve the health of cows is important.

* Regular staff meetings to discuss how to integrate what is happening on the farm and more efficiently manage all the different areas for herd health and performance.

Attention to the details in the maternity pen can have an effect on future reproduction, milk production, and survival in the herd.



CHAPTER 8 REFERENCES

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