Labor Systems for Caring for Sick Cows

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The process by which care and treatment are applied to sick animals by farm personnel is often more critical to a successful outcome than the medical prowess of the veterinarian. All health problems in dairy cattle are best viewed as "diseases of cows caused by people". To make them "diseases of cows cured by people" in an efficient manner, a systematic approach developed with the involvement of the farm labor force is needed. A labor system for sick cow care should include a description of the job(s) and requisite skills, strategies for labor management and a description of the system and its component programs.

Consider important skills and training

There are as many opinions about the qualifications of a good sick pen technician as there are dairy owners. Most disagreement seems to occur regarding the merits of prior experience and training. Prior experience can improve the speed with which a newly hired technician can take responsibility but may decrease compliance with existing farm programs. With or without prior knowledge, the characteristics associated with success include:

a "good eye for cattle"
understanding animal care and handling
capability to prioritize tasks
record keeping skills-detail oriented and thorough
ability to predict disease outcome and make decisions
big picture problem identification
good communication skills and team approach
desire to follow Standard Operating Procedures
understanding of sick cow mission

Design farm-specific job descriptions

Some basic questions should be considered when structuring labor assigned to sick cow care. These topics should be reviewed periodically, especially during periods of expansion.

- ⇨ What are the labor needs of the farm based on expected average and peak sick group size? Is someone available in this area full time and around the clock? Is this necessary or cost effective? Can night milkers or other personnel assist during low workload times of day without sacrificing quality or consistency?
- ⇨ Can the staff time and other expenses be reduced by dealing more quickly and effectively with animals requiring intensive care?
- ⇨ How are the tasks divided within and between areas? Is one person critical to success? Could task specialization make the system more efficient? What other responsibilities do these people have, e.g. calving, newborn calf care, processing purchased animals, breeding, vaccination, BST administration, bedding, dry cow treatment, moves, and how might schedules conflict?

If a dairy has enough cows to economically justify a full-time sick pen staff with an area specific task list, this solution is almost always preferable. Specialization of labor has advantages and disadvantages some of which are described below.

<u>Advantages of specialized labor:</u>
increased skill level
increased awareness of responsibility
someone always available

<u>Disadvantages of specialized labor:</u>
difficult to replace, expensive labor
one bad apple spoils the system
less efficient during slow periods

Maximizing labor efficiency in most cases requires expanding the task list outside of sick cow care. The most common additional duty is the management of calving and newborn calf care. This is practical since both require round-the-clock monitoring and the sick pen and calving pen tend to be located in proximity. In fact, some large producers have elected to manage the sick and calving areas as geographically and economically independent units within the farm.

Don't create schedule conflicts

Unfortunately, most tasks first considered for addition to the staff duties are not schedulable or may include emergency situations. Preferably, the number of

potentially conflicting emergencies, e.g. down cows and dystocia, and the number of not schedulable tasks, e.g. calving, should be limited. This is especially true if one person is on duty within a shift.

Prioritize tasks

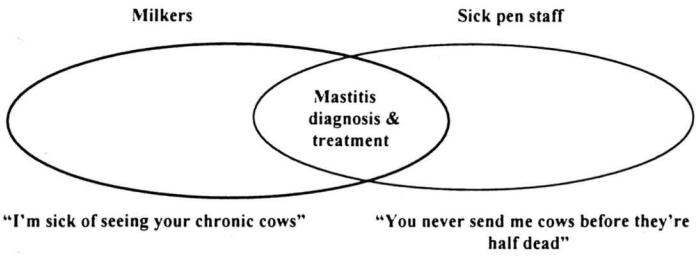
Fortunately, people successful at this job tend to enjoy the variety and challenge of juggling tasks. The ability to prioritize tasks is critical and the ranking of tasks should be discussed in advance. The objectives of prioritizing include: prompt attention to true emergencies, minimizing lock-up time for animals requiring examination or treatment, and provision of adequate time for basic lower priority tasks.

For example:

down cow > calving > sick cows > screening fresh/off milk cows > sampling > cleaning

Areas of interaction can create conflict or improve farm efficiency

Considerable frustration can occur for sick personnel due to lack of control over tasks that influence their success. For example, if animals with acute mastitis are not identified quickly enough by milkers, the chances of successful therapy are reduced. Of course, this is a two-way communication process, and milkers can become annoyed with problems created in an effort to improve efficiency in the sick pen. Good communication and follow through are essential to the function of the dairy as a whole.



No one should have his/her performance assessed by measures over which they have inadequate control. For example, the incidence of clinical mastitis is not directly influenced by the action of sick pen personnel, although the rate of recurrence and the case fatality rate are. It is important to understand which systems interact with the system of concern. The sick pen crew should be informed about and have the ability to make suggestions regarding all other systems that influence their ability to accomplish tasks. On a typical dairy farm, these include:

Dry cow, calving and fresh pen management
Recording and accessing data
Reproductive examination and management
Milker mastitis diagnosis, udder health programs and milking procedures
Lameness diagnosis and routine hoof care
Preventative health and production drug program
Nutrition/feeding management program
Heifer and cow purchases
Culling

Morale problems can increase turnover

What are the psychological occupational hazards of this job? Two have already been described: (1) The "sphere of concern" does not match the "sphere of influence".[1] This can lead to frustration and the feeling that "If they'd do their job, mine would be easier". Provision of opportunities to communicate and provide suggestions can help alleviate this stress.

(2) Dynamic schedule and multiple emergency tasks. This can lead to a feeling of both lack of control-"I'm busy enough without these extra calvings" and task-juggling induced exhaustion-"I can't keep up with everything". These syndromes can be avoided in part by informing the staff about expected changes in cow numbers or work load related information and by appropriate task allocation that incorporates flexibility with workload.

(3) Another source of labor dissatisfaction can result from the nature of the job: constant morbidity.

As every veterinarian knows, it can be depressing to deal with only unhealthy animals. "Sick cows, sick cows everywhere..." One creative alternative is to rotate this highly skilled labor into other areas on a periodic basis, for example between the insemination program and the sick pen. Rotating duties can be difficult to schedule, especially if there is high turnover of labor but can be both satisfying to workers and a good opportunity to have new eyes on old problems. Healthy competition can also promote quality performance in a rotating labor force, for example, comparing conception rates for inseminators. A mixture of duties within a work day, for example calving and calf care, can also provide relief.

(4) Subject to "uncontrollable" influences. The weather influences the workload for all farm personnel but can be particularly overwhelming for the sick pen staff. For example, wet weather not only increases the mastitis incidence rate but also tends to make sick animals improve more slowly and creates unpleasant working conditions. Bad weather can wear down employees from exhaustion during and after work-"It's raining and I can't sleep thinking about all the mastitis we're going to have". Inadequate facilities can lead to frustration with owners/managers, "My job would be easier if you'd get a roof over the sick pen". Personnel comfort can improve profitability as much as cow comfort.

Total quality management approach applies to sick cow care too

A total quality management approach has been applied to dairy farming.[2] Examples of this management technique have been described for youngstock[3] and udder health systems.[4,5]

Key concepts of this management theory include: the organization of work into systems, processes and tasks and the cooperative bottom-up approach to goal-setting that is required to meet agreed upon quality standards.

system = a group of related processes
process = a series of related tasks

The system is a Program to Manage Sick Cows. Involvement by consulting veterinarians could include assisting the sick pen staff and management in design, on-going modification and training in all processes. By participating in the development of these processes, the veterinarian can communicate more effectively concerning cases and can be more certain of appropriate and systematic drug use. This is especially important for prescription therapies administered under the supervision of the veterinarian. Process descriptions for treatment administration should include milk and beef withholding requirements for each specific indication, dose, route and frequency of administration. The treatment protocol should match the prescription label and can be used in the default calculation of drug costs and withholding dates for record keeping. Processes within the sick cow management system may include but are not limited to:

Sick cow identification
General examination
Diagnosis and treatment of commonly occurring disease
Sample collection
Treatment administration
Veterinary communication
Record keeping and internal communication
Sick pen area hygiene
Drug inventory
(Fresh cow monitoring)
(Calving and neonatal calf care)

Diagram processes

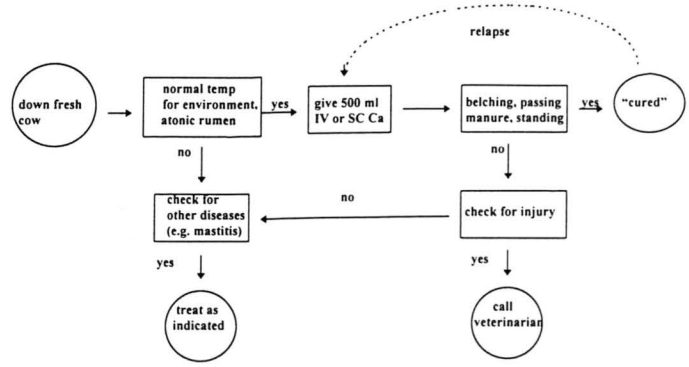
At least one flow diagram or Standard Operating Procedure is needed for each process. The standard operating procedure should specify the personnel involved, and the tasks involved, including documentation and feedback. These process descriptions should be updated regularly and retraining done at intervals based on turnover and performance monitoring. The record system should allow monitoring of process implementation and goal achievement. A motivational monitoring program should be accessible at all times, not only during performance interviews with the manager. A feed back system from employees to management should be included in the process design.

For example, a sick cow examination, diagnosis and treatment process can be outlined. Resources available for process development include a description of a sick cow examination to be performed by farm personnel published in one popular farm journal.[6] The details of the process are designed depending on the skills and expected training of individuals involved in implementation. The process overview lists all the steps involved in sick cow handling.

Sick cow examination, diagnosis and treatment program

Perform examination	Diagnose	Treat	Record	Monitor & evaluate
1.1 Observe at a distance for appetite, attitude, hydration and gait	2.1 (See definitions for common health problems)	3.1 (See treatment for common health problems)	4.1 Record ID, pen, lactation, DIM, event date	5.1 Calculate monthly disease rates including incidence, CFR and recurrence.
1.2 Restrain cow			4.2 Record diagnosis	5.2 Compare rates to trends and goals.
1.3 Take rectal temperature			4.3 Record treatment	5.3 Summarize drug and milk withholding cost for treatment of each disease
1.4 Examine milk and udder			4.4 Record antibiotic residue testing and calculate withholding for standard treatment	5.4 Compare drug inventory changes to expected drug use
1.5 Observe abdominal contour			4.5 Record move in and out of sick pen	5.5 Review and amend programs for treatment and prevention
1.6 "Ping" left and right sides			4.6 Record culled or died date	
1.7 Observe manure and vulvar region				
1.8 Check urine ketones				

More detailed descriptions of specific tasks and criteria for diagnosis and treatment should be diagrammed or outlined for each commonly occurring disease entity or symptom complex. For example, the milk fever diagnosis and treatment process illustrated in this article describes the criteria for diagnosis, the treatment, evaluation and the communication process for this disease.



A complete training manual can be created describing all processes and tasks pertaining to the job and area of the dairy. The manual should be considered a dynamic document created by team effort and updated in response to experience.

References

1. Gardner, C. Circles of concern and influence affect practice satisfaction. *DVM Magazine.* January 1995. 2. Fuhrmann, T. 1995. The Quest for Quality in the Dairy Industry. *Proc. 34th Annual Mastitis Council.* pp 3-10. 3. Furhmann, T. 1996. Strategies for rearing Comingled, Colostrum-Deficient Calves. *Bovine Proc.* pp 46-49. 4. Furhmann, T. 1995. The Quality-Minded Dairy Practitioner. *Bovine Proc.* pp. 38-39. 5. Sears, P. 1996. Total Quality Management: AABP Guidelines and Evaluation Records to Make Treatment Decisions. *Bovine Proc.* pp 82-89. 6. Young, C. and W. Graves. Check her out yourself...or call the clinic. *Hoard's Dairyman.* March 10th, 1996.

Abstract

Field evaluation of a fenbendazole slow release bolus in the control of nematode infections in first-season cattle

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The efficacy of a fenbendozole slow release bolus in controlling nematode infections of first-season cattle was evaluated in a field study in northern Germany. Two groups, each of 11 male calves, were set-stocked on separate pastures from May until October 1989 (157 days). The animals of one group were given the bolus at turnout and the animals of the control group were treated with fenbendazole (7•5 mg/kg bodyweight) eight weeks after turnout. Clinical inspections and measurements of faecal egg and larval counts, herbage trichostrongyle larval counts, plasma pepsinogen concentrations and body-weight were throughout the study. All the animals were slaughtered for worm counts and the evaluation of carcase quality two weeks after housing. The pasture grazed by the control group showed a marked increase in trichostrongyle larvae from late August onwards and, as a result, the control calves had increasing faecal egg counts and increased plasma pepsinogen concentrations in the latter part of the grazing season, although no clinical signs of parasitic gastroenteritis were apparent. The fenbendazole slow release bolus suppressed the trichostrongyle infections during the grazing season, and larval counts on the pasture grazed by the bolus treated group remained low throughout the study. Post-mortem examination showed that the bolus-treated calves harboured significantly ($P<0•01$) fewer trichostrongyle worms, including inhibited stages, than the controls. Because of an inadequate lungworm challenge during the grazing season it was not possible to evaluate the efficacy of the fenbendazole slow release bolus in preventing parasitic bronchitis. At slaughter, the bolus-treated animals weighed more than the controls and tended to have a better carcase quality.