Example Audit - DAIRY

The PAACO Example Dairy Audit pulls together components from US dairy audits to provide the most robust dairy audit training available, ensuring that PAACO certified auditors are prepared to execute a 3rd party audit against any well written audit tool.

Referenced audit platforms:

Outline

1. Animal Welfare Auditing Overview

Guiding philosophy

Robust animal welfare audits are based on scientific evidence, developed, and refined through expert perspective and consensus among professionals and consider further discovery. A sustainable animal welfare audit must consider the vulnerability of the animal and adequately address the responsibility owed to the animal.

Biosecurity and Safety

Auditors must always practice proper biosecurity, without exception, wearing protective clothing and shoe covers that can be properly disinfected or disposed of between farms. Care must be taken moving between groups of animals that are housed or managed separately to minimize the risk of spreading infectious agents from one group of animals to the next. This includes where possible checking younger populations first and washing and disinfecting foot covers when moving from one area to another. Cattle should not be physically handled. Where animal handling must take place, appropriate handling techniques should be used, gloves should be worn, and hands must be washed afterward. Auditors must also adhere to any additional biosecurity measures required/posted by the farm management.

Safety is paramount. Auditing on-farm presents many challenges, from weather, lighting, and terrain to personal safety. Farms can be busy places with lots of activity, and unforgiving equipment. Farm workers may not be expecting auditors in their work area, making it critical that auditors remain aware of their surroundings and must be seen. Therefore, auditors should always wear high-visibility vests or outerwear, should limit the use of phones other than for collecting data and should never wear in-ear headsets. If a phone call must be made or taken, auditors should find a safe area, away from traffic or farm lanes and cattle to do so. Protective ear devices are recommended in the parlor and milk-house, but they should not be worn on other areas of the farm where vehicle or animal traffic is expected. Navigating the farm while on foot or in a vehicle should be done using established lanes and paths. Fog, heavy rain, or snow can easily obstruct or disguise dangerous areas including gutters, manure pits and sink holes making it essential that auditors respect known paths.

Lastly, accurately assessing the welfare of dairy cattle requires that auditors have close contact with the animals on the farm. Walking through pens of loose cattle or through confined housing areas can be dangerous for the cattle and personnel if the auditors are not trained in cattle behavior and proper stockmanship. It is therefore recommended that auditors have documented experience handling and working closely with dairy cattle prior to performing any dairy animal welfare audit. PAACO certification has minimum requirements for farm animal experience. It is worth noting that the diversity in dairy farm size and systems may require that auditors acquire experience across a variety of dairy systems to ensure that they can audit farms safely and accurately.

Format

There are several audits currently being implemented throughout the US and the world. While specific details and outcomes may vary, all well written audits tend to have similar components. The goal of the PAACO Example Dairy Audit and training, which is not a real audit but based on principles of common audits, is to:

1. Introduce and practice auditing of the most common and essential components of dairy welfare evaluation
2. Ensure that every PAACO-certified auditor understands the rationale behind each measure evaluated
3. Provide every auditor with a foundational understanding of animal welfare, what it encompasses and how it is impacted by people and systems

A. On-farm animal welfare audits typically include:

1. Review and verification of animal caregiver training, health records, and standard operating procedures (SOPs).
2. Observation of animal handling and management practices
   i. Ideally observations are limited to those that can be verified at the time of the audit and do not rely on self-reporting.
3. An evaluation of the dairy cattle and their environment
4. A review and discussion of audit results*, including:
   a) Identifying areas of concern
   b) Identifying specific items for which corrective action is needed
   c) A plan for follow-up visits to document efforts made to effectively address areas of concern, thereby promoting the concept of continuous improvement*

> ***Direction for 3rd Party Auditors:*** *It is the responsibility of the party requesting the 3rd party audit to provide follow-up or guidance on the required actions based on the farm's performance.*

B. How Success is Measured: **Criteria for success will vary between audits. The PAACO Example Dairy Audit is structured around continuous improvement. It is the responsibility of the auditor to know which plan the audit they are using follows**.

1. **Continuous Improvement -** Audits may be founded on the principle of continuous improvement, setting clear non-negotiables for critical and other specific criteria while focusing on animal welfare outcome measures and management practices that will be improved upon over time measured against established goals. Goals may be set to national standard or may be customer/program specific using historical data to establish benchmarks.
2. **Points based or Pass/Fail** – Audits may employ a point-based system where a farm must accumulate a certain number of points to "pass" or be certified.
3. **Company Specific -** Each company using an audit may differ in specific time frames allowed for corrective actions. Different processors/customers (the "client") have varied

contractual obligations that will inform how they execute a given audit. The user of any audit, the client, should make expectations abundantly clear to the supplier farms and the auditors they contract.

B. Making sure an audit is successful:

1. **For an audit to successful** –
   a. **Prior to an audit** – The auditor should make every effort to:
      i. Understand the scope and process specific to the audit tool they are executing
      ii. Understand the expectations of the client specific to the format and timeliness of communicating and reporting findings
      iii. Practice to make sure they can evaluate all outcome-based measures according to the definitions in the audit to provided
      iv. Ask the client to provide clarity on any items including definitions of how a criterion is to be evaluated or on the process itself
      v. Make sure they have all the information necessary to execute the audit as it is written/intended (this may include pen counts, milking or feeding times and lay out of the farm/age groups)
   b. **On the day of the audit** - The necessary documents must be made available for review and a knowledgeable individual such as the farm manager or herdsperson must be available at the time of the audit should questions arise or translation be necessary.

2. **For an audit to be safe** - On the day of the audit, accommodation must be made to safely evaluate all cattle and facilities. For the audit to proceed in a safe manner all breeding bulls (if present in pens that will be entered for focal observations) MUST be moved to a separate area.

Sample Methodology

Sample methodology will vary between audits. The PAACO Example Dairy Audit will offer an example to allow for practice. A PAACO certified professional auditor should be sure to make the time to prepare for and understand the sample methodology of the audit they are being asked to execute and how to determine sample size.

In systems where seasonal calving or other seasonal practices are implemented the audit or client may specify that audits are staggered or scheduled to ensure each season is captured over time or so that periods of the year at greater risk for problems are monitored closely.

Pasture based systems may also dictate additional consideration in audits. Water access, shade and feed availability are some of the areas which may be impacted and that can be considered in an audit or in the coordination of audit scheduling.

Example Sample Strategy: Audits typically observe animal handling and care, examining representative subsets of each life stage housed on the farm including calves (bulls and heifers), heifers (weaned and springer groups), dry cows, lactating cows, and any pens for sick/injured animals.

The sampling methodology presented is guided by three main goals, to:

1) **Determine a reasonably accurate value of the prevalence for each outcome**
2) **Limit the time required to conduct the audit to 4-6 hours and**
3) **Minimize bias**

Audits may provide additional clarity on whether to score animals managed at off-site locations. For example, the program may give a specific distance/radius and ask the auditor to include animals kept within it.

Specific outcomes are often measured in specific pens according to life stage and specific risks associated with each life stage ("Focal" observations). For the purpose of practicing a sample calculation application we will use the sample methodology as described below using a sample size calculator (in Appendix D3) to determine the minimum number of animals that must be scored in each group/pen.

Audits needs to strike a balance between an ideal sample method to estimate the prevalence of specific outcomes and making sure that all animals on a farm are provided good care. The approach used in this example allows that on large farms targeted pens will be scored for each outcome-based measure, and to ensure that the general population is managed similarly, general observations are made of **all** pens and housing areas where specific animal outcomes are not evaluated. For PAACO training we will use the classification "Everywhere," broken down into facility- and management-based measures, to describe these. The facility-based measures are abbreviated as "M.E.T.A.L." (detailed below) to help auditors remember what is often included in the general observations made on every pen.

Sample group – On farms with less than or equal to 100 animals in a life stage (milk-fed calves, heifers, or lactating cows) **all the animals in that life stage will be scored**. On farms where there are more than 100 animals in a life-stage, we will apply a select group sampling approach (Table 1). The election of a 100-animal cut-point was based on estimates of the time needed to complete an audit. While it would be ideal to score every cow on every farm this is not possible on large farms within a 4 to 6-hour limit. US census estimates for 2022 suggest that of the 36,000 farms 65% of farms in the US have fewer than 100 cows and would have nearly every animal scored applying this method.

The primary driver for this approach is making sure locomotion is evaluated as accurately as possible given the goals described above. **Evaluating locomotion requires that cows are observed while walking and preferably while being viewed in full view from the side**. This view is best achieved on most farms by observing cows walking back to their pen/pasture after milking. Practical limitations such as multiple pens and long milking times limit the ability to score all cattle in some herds during a single visit. Therefore, in herds with more than one lactating cow pen or group, **lameness will be scored on the highest milk producing, oldest (multiparous) pen/group of cows or whichever pen represents the majority of those cows**. This group can be identified by using pen level production (pounds of milk per day) and lactation data (days in milk and parity) if available. All other outcomes in lactating cows and each heifer age group

will be scored using a single representative pen. Hospital or sick cow pens, if present, will be evaluated for evidence of treatment. The methodology for calf sampling will depend on the housing type, but the sample will represent the **entire age range of all calves on milk, including bull calves**.

To allow for the most accurate assessment of lameness planning the audit is dependent on the farm milking schedule. As a result, the order in which each outcome is measured/assessed may vary from farm to farm. It is ideal to score individual age groups at or around feeding to allow for assessment of cattle while standing, however, this may not be possible. Some criteria may be evaluated at the beginning, middle or end of the audit, depending on the availability of management and employees. Critical criteria are evaluated throughout the audit. It is best to coordinate with management prior to the audit to establish when, during the course of the audit they will be available to review paperwork and treatment records.

This approach allows for the inspection of all pens for general condition and scoring outcome-based measures where cattle are typically confined, such that scoring for individual outcomes is manageable. Specific sample procedures for each outcome measure are described in Table 1.

The PAACO Example Audit breaks scoring into 2 categories: Observations you make *Everywhere*, and *Focal* observations.

***Everywhere*:**

***Facility-based* – EVERY pen is evaluated using the "METAL" criteria:**

- ✓ **Movement** – Do all cattle have enough space to move freely and turn around in their pen?
- ✓ **Enrichment** – Is enrichment present for all cattle?
- ✓ **Thermal** – Is shade provided? Do pens have additional protection from severe weather?
- ✓ **Access to water** – Does every pen have water available?
- ✓ **Lying surface** – Do all cattle have a soft, comfortable lying area?

***Management-based* – If any of the following are seen across the farm, they must be noted:**

- ✓ **Immediate care** – Are there any cattle with severe (score 3) injuries, lameness, emaciation or showing evidence of thermal stress?
- ✓ **Emergency –** Are there any animals noted in distress, moribund or non-ambulatory? Is there evidence of timely and humane euthanasia?
- ✓ **Stockmanship** – Are the cattle being handled quietly and calmly? No acts of abuse or neglect? Are facilities maintained to prevent slips and falls?
- ✓ **Prohibited practices** – Is there any evidence that prohibited practices are in use?

***Focal*:**

Milk-fed calves – Housing for milk fed calves may be individual, paired or group housing. If housed individually, in pairs or groups and there are ***less than or equal to 100 calves present, all the calves (including any milk-fed bull calves on site) will be scored***. If greater than 100 calves are present, a subset of calves will be sampled across the entire age range. The sample calculator will be used to

determine the minimum total number of calves scored. If housed in groups, the sample calculator will also be used to determine the minimum number to score in each milk-fed calf pen/group. **Regardless of the housing system, a random sample will be taken *across the entire age range of milk-fed calves*** to obtain the number determined by the sample size calculator. If milk-fed male calves are on site, they are to be included in the sampling and scoring.

Heifers – Heifers are commonly housed in groups and managed extensively with limited confinement, often in large pastures. ***If there are less than or equal to 100 heifers present, ALL heifers (or the minimum number as defined by the sample size calculator applied to each pen) will be scored***. If more than 100 heifers, **two groups will be scored:** the group of the **heifers most recently weaned ("weaned heifers")** and the **oldest group of bred heifers ("springers")**. The sample size calculator will be used to determine the minimum number of heifers that should be scored within each pen applying a random sampling procedure to the pen. While it may not be possible to keep track of each animal scored, efforts will be made not to score the same heifer twice.

Lactating Cows – The sampling approach is determined by the number of animals and housing. In herds consisting of a single lactating group, **ALL** lactating cows will be scored for locomotion upon exiting the parlor or after being milked if in tiestalls and not released. In large herds with multiple pens, ALL cows in the highest milk producing, oldest (multiparous) pen will be scored for locomotion while exiting the parlor. The sample size calculator is used at the pen level to determine the minimum number of cows to score for hygiene, body condition and tails. While it may not be possible to keep track of each animal scored, efforts will be made not to score the same cow twice.

Hocks & Knees - Hocks and knees should be scored in the parlor. On farms with only 1 lactating string, hocks and knees will need to be scored after milking in the pen, along with tails and hygiene and the milking routine of the fresh or hospital pen is observed for parlor stockmanship. If it is not possible to score hocks in the parlor, the auditor must try to observe at least 2 turns of the milking parlor to allow for observation of stockmanship during milking and adherence to the written milking routine.

Tiestalls – It is common that audits do not require that cows be released from tiestalls if it is not the normal procedure for the farm. Cows in tiestall barns are typically scored for hocks, tails, hygiene and body condition while in the stalls during milking. If released from tiestalls at the conclusion of milking, locomotion should be evaluated upon release from the stall. If locomotion must be scored in the tiestalls it should be done once the milking units are removed.

Automatic Milking Systems - In robotic parlor herds (AMS) locomotion will be scored inside the pen along with other outcomes. It is recognized that assessing locomotion in herds with AMS requires additional consideration. To score locomotion in AMS herds, the audit can be scheduled on days where bedding is being added or with other management events that require cows to be locked up or moved from one area to another to facilitate observation of locomotion. In some cases, where farms have only 1 lactating pen, on tiestalls where cows are released or on AMS herds video monitoring may be used to assess locomotion.

On farms with multiple pens, which may be segregated based production, parity or pregnancy status, deciding which pens to score can be a challenge. The ideal pen to score for locomotion should include the highest producing, oldest (multiparous) cows or whichever pen represents this pen best. If not measured on the same pen as locomotion, hock and other outcome measures should be scored in pens with cows that have had time in the lactating cow environment such that the effect of the environment on the cow will likely be reflected in the outcome. **Therefore, multiparous, mid to late lactation cows should be evaluated and wherever possible scoring first lactation and early lactation groups should be avoided.**

***Dry Cows and Bulls* -** Dry cows are commonly housed in groups and managed extensively with limited confinement. The dry cow pens will be included in the general walk through where EVERY pen is evaluated using the "Everywhere" criteria (M.E.T.A.L. and management-based measures). There will be no other outcomes measured in the dry cow groups, unless the audit is completed during the dry season, in which case the dry cows will be scored using the lactating cow measures.

***Hospital/Special Needs Pen* –** The individual ID of up to 10 cattle in each treatment/hospital/sick/ beef or chronic pen will be recorded. Treatment records will be checked to confirm that cattle in these pens are receiving treatment for any evident conditions. These pens will also be included in the general walk through where EVERY pen is evaluated using the "Everywhere" criteria (M.E.T.A.L. and management-based measures).

Table 1. Ideal and minimum sampling required for each measure. For "Focal" observations, ideal samples are taken if time and the housing system allows; minimum sampling is required regardless of time taken. When calculating farm prevalence for each measure and life stage group, use the total of animals of that life stage group observed as the denominator. "Everywhere" observations are separated into Facility-based measures that are recorded in every single pen, and Management-based measures, which are scored as they are seen across the farm.

Focal		
Measure	**Ideal sampling**	**Minimum sampling**
Locomotion	ALL lactating cows if 100 or fewer or 1 ENTIRE pen of lactating[1] cows scored as they leave the parlor.	Tiestalls – If cows not released, locomotion is scored in the barn after the milking units have been removed. If only 1 pen of cows, locomotion scoring is the priority, score all the cows exiting the barn.
Hocks & Knees	One entire pen of lactating[2] cows	If scored in the parlor, every cow in the pen. If scoring in the parlor not possible, score with other outcomes where minimum # of lactating cows in the pen scored determined by sample calculator
Body condition	All calves[3], one entire pen of lactating[4] cows, the weaned heifer and springer heifer pen[5]	# of animals in lactating[4], weaned and springer heifers[5] and calves[3] pens scored determined by sample calculator
Injured tails	One entire pen of lactating[4] cows and heifers	# of lactating cows in the pen scored determined by sample calculator
Hygiene	All calves[3], one entire pen of lactating[4] cows, the weaned and springer heifer pen[5]	# of animals in lactating[4], weaned and springer heifers[5] and calves[3] pens scored determined by sample calculator

Everywhere	
Measure	**What to score**
Facility-based (M.E.T.A.L.)	
Movement	All animals should be able to move and turn around freely in their pen. Tiestalls do not meet this requirement, including if animals are kept in tiestalls for only part of the year. Trainers should not touch cows in a standing position.
Enrichment	Every pen will be observed for presence of enrichment.
Thermal	All cattle should have access to shade. Additional measures of protection from severe weather should be provided.
Access to water	Check that all animals have access to water.
Lying surface	Every pen will be observed. An acceptable lying surface is NOT bare metal, wire, wood, stone, concrete, rubber mat, mattress, or waterbeds without enough bedding substrate to avoid injury.
Management-based	
Immediate care	Every pen will be observed for severe (score 3) hock/knee/other injuries, lameness, emaciation or signs of thermal stress. Record the individual ID of any animal noted with a severe condition and confirm that they are being treated. Cattle will be observed for evidence of thermal stress, making note if shade or other measures are taken to provide relief from thermal stress.
Emergency	Attention will be paid for any animals noted to be in distress, moribund, or non-ambulatory, and evidence of timely and humane euthanasia. Non-ambulatory animals must be isolated from other ambulatory animals and must have overhead shade and shelter, fresh feed within reach, and soft and dry bedding.
Stockmanship	It will be noted if cattle are handled quietly and calmly or if there are any acts of abuse or neglect; particular attention should be paid to stockmanship in the parlor, trying to observe at least 2 turns. Record the number and location of any slips and falls.
Prohibited practices	Record evidence of prohibited practices, including tail docking and branding.

[1]Highest milk producing, oldest cows (whichever pen has the majority of these cows)

[2] It is preferred to score hock injuries in the milking parlor and on a pen with multiparous cows later in lactation to accurately represent the effect of the environment on the outcome

[3]Calves include milk-fed calves and are to be scored across all represented ages (e.g., if there are 200 calves housed individually, score 132 calves from youngest to oldest such that the sample measured represents the range of sizes of calf kept in the housing system)

[4]Hygiene, body condition and tails may be scored on either the pen evaluated for locomotion or hocks, which ever allows for scoring of cattle immediately after returning from the parlor as they are likely to remain standing at the feed-bunk and may be locked up.
[5]Oldest group of heifers (springers), or whichever pen has the majority of these heifers will be scored

Guidance on how, when and where to collect focal observations: A well written audit should provide specific guidance on how, where and when each animal-based measure is evaluated. It is the responsibility of a professional auditor to make every effort to schedule and organize the audit such that all observations can be completed in a manner that allows for fair and accurate representation of the outcomes. If an auditor is not able to complete observations according to the guidance given, they should make note of the reason for the missing information and continue. Under no circumstances should they report findings based on estimates, approximations or observations made inconsistent with audit guidance. When in doubt, auditors should keep the fact that the results of audits may be used to set future benchmarks and program goals or even limit market access top of mind. It is therefore critical that auditor's endeavor to score animals consistently and accurately.

For the PAACO example audit, the "how" of each animal-based measure is provided in the appendix. The "when" of scoring in this audit is driven by the milking schedule/order and when calves are to be fed. The primacy of these observations may mean that other observations are hindered or missed altogether. Again, if an auditor is not able to complete observations according to the guidance given, they should make note of the reason for the missing information and continue. The "where" of scoring in this audit will vary based on farm design, lighting, and auditor safety. Regardless of the impacts of each of those factors, it is important that auditors are consistent with the "where" when scoring. Specific guidance for each outcome is provided below.

Specific Guidance

Locomotion – As described earlier locomotion should be scored after milking, viewed from the side, returning to their home pen/paddock/pasture. Choosing a place to observe cattle without creating a distraction can be challenging, and it may not be possible to find a "perfect" position. Any challenges that may have impacted scoring should be noted. Scoring locomotion requires concentration and patience. Locomotion scoring should not be done with other observations, while collecting other audit information or while carrying on interviews or conversations with farm employees. Under rare circumstances, when cows are released from stalls one at a time and are slowly moving passed you, you may be able to assess hygiene and severe body condition. Due to the distance and position from which you should be scoring locomotion, it is not possible to accurately assess hocks or tails, even if cows are moving along slowly, one by one.

Tails – Tails should be evaluated from the rear of the cow. This may be done while cows are eating, milling around or being milked in flat-barns or tiestalls. Side views are not acceptable, and cows should be close enough (within 5 feet, or 1.5 meters) such that subtle swellings can be consistently noted. It is not necessary to, nor should auditors touch the tails to score. Some parlors may be designed in such a way that the full length of the tail can be observed from behind without obstruction. In such cases, tails may be scored in the parlor as long as the auditor can keep up with the pace of scoring hocks and knees without disrupting parlor flow.

Body Condition and Hygiene– Body condition and hygiene should be scored while the auditor is standing at the same level as the animal, often from the rear and side. This may be done while cows are eating, milling

around or being milked in flat-barns or tiestalls, at the same time tails and hygiene and potentially hocks are evaluated. In cases where cattle are spread out on pastures or large areas not easily navigated without causing undue stress or mini stampedes, it is acceptable to use binoculars to tally the number of obviously emaciated cattle (score 3 BCS) and cattle with poor hygiene (score 3). In this case, the auditor should record that proper scoring could not be done, but that cursory evaluation of the group revealed "X" number of cattle were found to be emaciated or with poor hygiene.

Hocks and Knees – Hocks and knees should be evaluated in the milking parlor whenever possible. In small herds or herds with only one milking group, it is recommended that the first group of cows into the parlor is evaluated for hocks and knees and then the auditor moves on to score the remainder of the herd for locomotion. In tiestall barns, or groups scored while cows are at the feed bunk or locked up, hocks and knees may be scored along with tails, body condition and hygiene.

Sample Size – It would be ideal to score every animal in each pen evaluated. The ideal becomes impractical on large herds, unless we endeavor to spend several days on a farm to score every animal for every outcome. Using a targeted sampling method, we can score every animal in the targeted pen to provide the most accurate prevalence estimate. In the case of locomotion, it is possible to score every cow as they exit the parlor by exception, that is, observing every cow, but only recording the cows with a score of 2 or 3. Because the total number of cows in the pen is known, we can assume any cow NOT counted as a 2 or 3 is a 1. Scoring by exception can be done any time it is known that EVERY animal in the pen will be scored, and the number of animals in the pen is known. It is difficult to score every cow while IN the pen as many housing systems do not have lockups, or cows may not be locked up when observed. To address this, a sample size calculator can be used to determine the target for the minimum number of cows to score in a pen where individual outcomes are evaluated. Determining sample size (n) is very important. Samples that are too large may waste time, resources and money, and samples that are too small may lead to inaccurate results. To achieve the best representation of the population, the minimum sample size needed to estimate the population mean (μ) will be calculated for each pen. Sample calculation examples are provided in Table 2 applying a confidence interval of 95% and precision "e" of 5%.

Sample size for a given life stage to be scored in a pen or group is calculated using the formula:

$$n = N*X / (X + N - 1)$$

- Where $X = Z^2 *p*(1-p) / e^2 = 384.16$
- where "Z" = 1.96 for 95% CI
- "p" is expected true proportion= 50% (results in the largest sample size)
- "e" is desired precision (half desired CI width) =5%

Inputs are the assumed true value for the proportion, the desired level of confidence, the desired precision of the estimate and the size of the population. The desired precision of the estimate (acceptable error in the estimate) is half the width of the desired confidence interval. For example, if you would like the confidence interval width to be about 0.1 (10%) you would enter a precision of +/- 0.05 (5%). Auditors may use the table provided (in Appendix D3) or perform the calculation for each specific group/pen size. If using sample size calculation information in Appendix D3, round the group or pens size number UP to the nearest value in the table.

Table 2. Sample calculation examples. Two farms with similar animal numbers, 1 with fewer than 100 animals in a life stage and another with over 100 animals in each life stage.

Life-stage	Number	Pens	Ideal	Minimum	Notes
FARM A					
Lactating Cows	90	2 equal pens 45 cows each, similar days in milk	90 – Score every cow	42 in each pen (84 total)	The sample calculator is applied at the PEN level
Dry Cows	15	1			**"Everywhere" measures (M.E.T.A.L. + management-based); Score as lactating if scoring during seasonal dry period**
Heifers	96	4 pens: 20,20, 20 and 36	96 – Score every heifer	20+20+20+ 33 = 93 total	The sample calculator is applied at the PEN level
Calves	28	Individual pens in a barn (heifer and bull calves mixed)	28 – Score every calf	28	
Hospital[1]	5	1			**"Everywhere" measures (M.E.T.A.L. + management-based); Write down all ear tags and check records**
FARM B					
Lactating Cows	110	Tiestall barn (1 "pen")	110 (all the cows in the "pen")	86	
Dry	18	1			**"Everywhere" measures (M.E.T.A.L. + management-based); Score as lactating if scoring during seasonal dry period**
Heifers	105	3 pens (young to old): Pen 1=20, Pen 2=30, Pen 3=55	75 - Score the weaned (Pen 1) and springer heifer (Pen 3) pens	20 + 49 = 69 total	The sample calculator is applied at the PEN level
Calves	18	All in single calf hutches	18	18	
Hospital[1]	5	1			**"Everywhere" measures (M.E.T.A.L. + management-based); Write down all ear tags and check records**

[1] Hospital includes any group of cows, calves or heifers being kept separate for treatment, aka "sick pen", "special needs pen"

2. Documentation & Protocols

It is common practice for audits to include a requirement for and review of paperwork including but not limited to written standard operating procedures (SOPs), treatment and or training records. Included here are examples of required documentation and best practice to evaluate compliance. Audits may differ in the specific SOPs required, the elements required within an SOP or which employees are required to be trained. It is up to the auditor to ensure they audit against the audit tool they are being asked to execute.

Training – Training employees (including family members) on proper stockmanship is essential to protecting the health and welfare of all cattle on the farm. **A written log must be kept providing documentation of training**.

a. Cattle Care Agreement: All caregivers (including owners and managers) and service providers (including the herd veterinarian, nutritionist and hoof trimmers), who may come into contact with cattle on the farm must each review and sign a *Cattle Care Agreement (see Appendix C2-1 for the template) with a corresponding endorsement signature from the owner/manager*. By signing *The Cattle Care Agreement, each* person acknowledges that they understand the proper care and handling practices for all cattle on the farm.

b. Stockmanship Training Every caregiver, regardless of specific job description, must review the following Merck Animal Health Dairy Care 365 Learning Modules: (1) Introduction to Dairy Stockmanship (2) Low Stress Handling of Dairy Calves and Heifers (3) Handling Down Cows and, (4) Newborn Care and Handling. Every caregiver must also be given training to recognize cattle in need of care, including recognizing when euthanasia is needed, and who should be contacted. Other forms of formal stockmanship training can be substituted* for one or all the modules if training and content can be verified. Acceptable verification includes a letter from the provider and an agenda describing the material covered in the training.
*****PAACO certified auditors must make themselves familiar with the Merck modules so they may evaluate if substituted content is sufficient. https://www.merck-animal-health-usa.com/dairy-care-365

c. Culture of Care Internal animal welfare assessments should be taken periodically, a minimum of once per year or throughout the year. Full or partial assessments may be performed by the veterinarian of record as an addition to a regular herd health visit, by other herd health specialists or by caregivers specifically trained to assess welfare. A farm may choose to assess specific areas that were identified in previous audits as areas in need of improvement (locomotion or stockmanship), or if they suspect performance in any areas has slipped (looking for evidence of newly injured tails, or protocol drift). Internal assessments serve as an important driver for continuous improvement and reinforce management's commitment to animal welfare with staff. Results of full or partial internal assessments should be documented.

Evaluation – Training

Training – Records/training logs will be reviewed to determine if all current caregivers have received initial and annual refresher training by verifying current employee names with the log and date of training.

a. **Caregivers**
   - ☐ Mark YES if training log confirms that all new and existing caregivers have received initial training and annual refresher training.
   - ☐ Mark NA if the farm has no employees.

b. **Delivery and Confirmation of Training –** Two caregivers will be selected at random by the evaluator and asked when, how and what type of training was provided to them. (If necessary, the farm must be sure to have a person available who can translate for the auditor)
   - ☐ Mark YES if caregiver confirms that they have received training.
   - ☐ Mark NA if the farm has no employees or if there were no employees available for interview.

Training Content

a. **Cattle Care Agreement -** Confirm that for each caregiver and service provider, the cattle care agreement has been signed within last 12 months.
   - ☐ Mark YES if each caregiver and service provider has signed the Cattle Care Agreement.

b. **Stockmanship -** Confirm that for each caregiver, there is a record of stockmanship training in the training log within last 12 months.
   - ☐ Mark YES if the training log confirms that all caregivers have watched Merck Dairy Care Modules or have received equivalent training.

c. **Culture of Care-** Confirm that internal assessments of animal welfare have been completed and documented.
   - ☐ Mark YES if there is evidence that internal animal welfare assessments have been completed at least once per year.

Records

Veterinary Oversight Having an established Veterinary Client Patient Relationship (VCPR) is essential to the health and welfare of the cattle on the farm as it ensures oversight of health records and treatment. The AABP provides guidelines on establishing a VCPR:(https://aabp.org/resources/aabp_guidelines/vcprguideline_032020.pdf).

a. Veterinarian Client Patient Relationship (VCPR) – A VCPR form (example provided, Appendix C2-2) must be signed by the veterinarian of record (VOR) and current (signed within the last 12 months).

Health Records Maintaining identification of individual animals and health records in a herd are essential to ensuring animal health and welfare as they are necessary to monitor the health of the individual as well as the herd, evaluate if therapies are adequate, and identify areas in need of attention.

a. Individual animal identification To maintain adequate records animals must be individually identified in way that is easy to read. Calves (including bull calves), heifers, bulls and cows should each be identified by a unique, readable identification (ID) which can either be an ear tag or neck band. Unless required by law, herd level or individual ID **hot iron or freeze branding is prohibited**. Individual ID must be placed within 24 hours of birth. Calves that are to be sold, even if within 24 hours of birth must have at a minimum a metal or plastic ear tag/clip with the ID recorded. This criterion will be assessed during evaluation of the maternity and calf area.

b. Health Records Up to date health records, including disease, treatment and mortality must be kept for all animals at all life stages. Treatment records must include the animal ID, treatment date, reason for treatment, treatment dose, route and duration with appropriate milk and meat withholds. Mortalities must also be tracked and records kept indicating whether the animal was euthanized.

c. Milk Quality The average somatic cell count for the previous 12 months must be less than 300,000 cell/ml. Mastitis is an inflammatory response of the mammary gland typically caused by bacteria and has a negative impact on animal welfare, milk quality and production. Monitoring of udder health should rely on the use of cow level SCC testing in addition to health records tracking clinical disease. While the SCC can vary between each individual quarter, an individual cow SCC of 200,000 cells/ml has been recognized universally as the threshold for subclinical mastitis, however, clinical infections may raise the SCC of an individual cow over 9 million cells/ml. Due to this wide variation in SCC it is difficult to estimate the prevalence of mastitis in the herd based on bulk tank SCC data. While SCC is not a perfect indicator, it is an easily accessible high-level indicator of overall management.

Farm Management Records

Veterinary Oversight

a. **VCPR** – A copy of a signed, current VCPR (example provided, Appendix B1-2) must be made available.
   - ☐ Mark YES if a VCPR form has been signed by the veterinarian of record within the last 12 months.

Records

a. **Individual ID** – Presence of individual animal ID will be confirmed on male and female calves, heifers and cows during the observations made for Level 4 criteria.
   - ☐ Mark YES for each age life stage group that has some form of individual animal ID. It is recognized that newborn calves may not be tagged immediately.
   - ☐ Mark YES if there is evidence that calves are tagged within 24 hours.

b. **Health Records –** Health records, including treatment, morbidity (including injury), and mortality events for all animals will be confirmed for all age groups by comparing calves and lactating cows in the hospital/marked for treatment with current treatment lists (examples provided, Appendix B2-3). Evaluate treatment for all animals in the pen up to 10. If there are no animals currently being treated, confirm that treatment records are being kept.
   - ☐ Mark YES if adequate (as defined above) treatment records are being kept for each life stage on the farm.

c. **Milk Quality –** The average somatic cell count for the previous 12 months must be less than 300,000 cell/ml.
   - ☐ Mark YES if 12-month SCC average is <300,000 cells/mL.

Farm Management

Written Standard Operating Procedures (SOPs) Establishing a minimum set of standard SOPs, detailing written instructions to achieve uniformity of the performance of a specific function, are essential to demonstrate that a farm has a plan in place for promoting the health and welfare of the cattle. Having SOPs facilitates proper training of caregivers and ensures that processes have been established for critical areas on the farm, which can be easily referred to in cases of emergency. Templates may be provided to allow for ease of use but may be substituted with SOPs developed by the individual farm and their veterinarian of record.

To allow for consistency in the evaluation of SOPs, a SOP requirement summary sheet and templates may be provided highlighting specific items that must be included in each SOP. In the examples provided, requirements are highlighted in *BLUE underlined italics* in each SOP template (see SOP requirement list Appendix C1). As farms are allowed to create their own SOPs, which may include combinations of one or more topics, it is the responsibility of the auditor to become familiar with the SOP requirements of each audit as well as AVMA and AABP guidelines so that they may evaluate adequately whether all areas are addressed, and if SOPs are consistent with the referenced guidelines. Accurate evaluation of an SOP requires 3 steps (questions to be answered):

- ✓ Is the SOP available?
- ✓ Does the SOP meet the minimum requirements of the audit?
- ✓ Does the SOP accurately represent the practices on the farm?

SOPs commonly required - Examples to be used for training

a. Non-Ambulatory Cow Care
   http://aabp.org/Resources/AABP_Guidelines/non-ambulatory2020.pdf
b. Euthanasia
   https://www.avma.org/sites/default/files/2020-02/Guidelines-on-Euthanasia-2020.pdf
   https://www.aabp.org/Resources/AABP_Guidelines/EUTHANASIA-2023.pdf
c. Disbudding & Other Painful Procedures
d. Fitness for Transport
   http://aabp.org/Resources/AABP_Guidelines/transportationguidelines-2019.pdf
e. Calf Care & Maternity Pen Management
f. Regionally Specific or Audit/Customer Specific SOPs – Auditors must make themselves familiar with specific audit requirements

Written SOPs - A copy of each SOP, signed by the veterinarian of record, must be available for review. In lieu of signing each SOP, the VOR may complete and sign an Annual SOP Review Checklist affirming that each SOP has been reviewed and reflects current practices on the farm. SOPs will be reviewed to ensure that they meet the guidelines set forth by the SOP requirement list. SOPs are not required for procedures that are not done on the farm.

a. **SOPs have been reviewed and signed by the VOR within the last 12 months**
   - ☐ Mark YES if the VOR has signed that they have reviewed the SOPs in the last 12 months.

b. **There is a written SOP for each of the required SOPs that are practiced on farm**
   - ☐ Mark YES all required SOPs are present.

c. **SOPs meet the minimum requirements as described in the SOP requirement list**
   - ☐ Mark YES if ALL the SOPs are complete and meet the minimum requirements.

d. **SOPs are consistent with what is being done on farm**
   - ☐ Mark YES f it is observed that farm practices are consistent with the written SOP.

e. **SOPs must be available in a language understood by the caregiver**
   - ☐ Mark YES SOPs are provided in the language understood by the caregiver.

One SOP will be chosen at random and one of the caregivers responsible for that SOP will be interviewed. Confirm that caregivers have been instructed on specific SOPs and are implementing the SOPs correctly.

- ☐ Mark YES if the caregiver confirms knowledge of the SOP and demonstrates clear understanding of their duty in agreement with the SOP.
- ☐ Mark NA if the farm has no caregiver or there was no caregiver on the farm at the time of the audit.

Example of an SOP requirement and justification:

Humane disbudding or dehorning – Calves must be disbudded humanely before 8 weeks of age with pain control

The application of polled genetics is ideal to avoid the need for disbudding altogether. It is acknowledged that farms will need to develop a deliberate breeding strategy to incorporate polled genetics into the herd over time to minimize inbreeding and the potential negative impacts of single-trait-focused breeding. Until herds achieve a polled status, cattle must be disbudded humanely using paste, hot iron or cautery; dehorning (removing the horns any time after 8 weeks of age) is prohibited.

Age. The current convention is to disbud at or before 8 weeks of age. To minimize the damage and invasiveness of the procedure, it should be carried out as early as possible, as early as one day of age, but no later than 8 weeks.

Method and pain relief. There is ample evidence that both a local nerve block and administration of a non-steroidal anti-inflammatory (NSAID) reduce the behavioral and physiological signs of pain for both cautery and paste methods. Thus, both local anesthesia and analgesia are required whatever the technique used. Natural or homeopathic products, including "dull-it", are not acceptable forms of pain relief.

Concern has been raised that caustic paste is more aversive than the cautery procedure. Thus far, there is limited evidence of the comparative pain associated with the use of paste compared to a hot iron, and little research has been done evaluating caustic paste at less than 3 days of age. Disbudding with clove oil and cryoablation are not as effective as cautery. Scooping causes a more marked cortisol response than cautery in young calves but has received relatively little scientific attention in animals under 8 weeks of age.

Use of local anesthesia and analgesia does not resolve all of the welfare concerns associated with the disbudding procedure. For example, recent evidence suggests that calves avoid places where they were disbudded but avoidance was less pronounced as procedures were refined (were provided pain control both during and after the procedure). Pain during healing is also a concern, evidence suggests that wounds from the cautery bud-in method take 5 to 9 weeks to heal. There is evidence that the wounds are painful during this time to heal, but little is known about how to best control this pain.

- ✓ **Method -** Paste or cautery can be used. It is recommended that paste not be used after 3 days of age to minimize the risk of rubbing paste off the intended area. Scoops, bands, clove oil or any other methods other than paste or cautery are not acceptable.
- ✓ **Age completed –** MUST be completed before 8 weeks of age
- ✓ **Analgesia –** MUST always be provided regardless of age
- ✓ **Anesthesia –** MUST always be provided regardless of age

3. Cattle and Their Environment

Facilities should be designed, constructed, and maintained to provide and promote animal health and welfare, reduce the risk of injury, provide protection from extreme weather and prevent the development of injury.

There are several measures that are used to evaluate environment. Where possible, it is preferred to use outcome-based measures for these reasons:

1. Outcome-based measures allow for clear definitions and categories such as normal, moderate, and severe or using commonly used scoring systems.
2. Outcome-based measures reflect impact of the environment over a prolonged period, representing history rather than the moment.
3. Outcome-based measures acknowledge that ideal system design changes over time and that management can adapt less than ideal systems to provide for good welfare.

For the purpose of training, we often use a 1-2-3 scoring system for outcome-based measures where 1=normal, 2 = moderate, 3 = severe. The application of a 1-2-3 system is to prioritize consistency across auditors. Audits will vary in both the setting of goals and grouping. Some will summarize a total across age groups, others will record the outcomes specific to each measure in each age group. Goals may be set based on published data or internally based on available data specific to a supplier. In this example goals for locomotion and injured tails are provided, set to the top 25% of farms based on available data. Goals for calf body condition based on data available from audits using the same sample and scoring system as described in the practice audit are also provided. Goals for score 3 locomotion (severely lame), body condition (emaciated) and hocks (severe hock lesions) in this example audit are set to 0%, consistent with the "METAL Everywhere" observations and expectation that cattle with severe conditions are identified, provided immediate care and are not kept in the general population.

Still there are some measures that are based purely on provisions. Facility-based measures can be challenging. The area of shade provided by trees is difficult to measure at best but is inconsistent when considering seasons. The "softness" of a surface is subjective. Exact pen size, feeding space and water space can be challenging or impossible to measure accurately. Still, in some instances it is necessary to

The PAACO Example Dairy Audit was designed to provide the best opportunity to learn how to evaluate various animal welfare measures consistently and adequately. When possible, it is preferred to time the evaluation of each age group around feeding so that they are standing, making observations of injuries, body condition and hygiene possible. It is recognized that this is not always manageable. If groups of animals are lying down while observations are being recorded, it is recommended that the auditor walk amongst the animals, quietly, as this will often encourage them to stand. Cattle should be left lying if they do not rise after a calm walking of the pen. Cows suspected to be non-ambulatory may be provided encouragement to stand (gentle knee to the rump) to evaluate their ability to stand. **Only cows standing will be evaluated**. If the resulting number of cows scored is less than required by the minimum sample calculator, use the number scored and provide an explanation in the comment/notes section.

use such outcomes or substitute measures in a sincere effort to evaluate the impact of the provision on the animal's welfare.

Rationale for all measures assessing cattle and their environment will follow the checklists below in alphabetical order. If measures are explained under a different term in the rationale, "**See ____ in Cattle and Their Environment"* will be noted in the checklist.

Evaluation – Everywhere (M.E.T.A.L.)

Every pen on the farm will be evaluated for the following criteria:

Movement

Ability to turn around – Mark YES if all cattle scored have enough space to turn around and lie down comfortably. Evidence for this includes cattle facing both directions in the pen/hutch during the evaluation and feces at both the front and rear of a pen/hutch. If animals are housed in tiestalls for any portion of the year, mark no for the age group housed in tiestalls.

- ☐ Yes Calves
- ☐ Yes Weaned Heifers
- ☐ Yes Springers
- ☐ Yes Lactating Cows
- ☐ Yes Dry Cows
- ☐ Yes Special Needs/Hospital Pen

Trainers – If trainers are used, they must be maintained so that they rest at least 2 inches (5cm) above the animal as they stand in a relaxed position and may not be used on cows close to calving or recently fresh.

- ☐ Mark YES if trainers do not touch any of the observed cattle while standing in a normal position.
- ☐ Mark NA if trainers are not used

Enrichment Mark YES if each pen of cattle has a brush, scratching surface (excluding normal structural components of housing), or other engaging type of enrichment in the home pen (note other type of enrichment).

- ☐ Yes Calves
- ☐ Yes Weaned Heifers
- ☐ Yes Springers
- ☐ Yes Lactating Cows
- ☐ Yes Dry Cows
- ☐ Yes Special Needs/Hospital Pen

Thermal

Shelter/Shade – Mark YES if all pens of cattle have access to shelter/shade. Shelter may include permanent shade structures, patches of trees or temporary cloth (raised seasonally). Rows of trees may be considered a wind break but not shade. A single tree is not sufficient. The area of shelter/shade provided will not be measured at this time.

- ☐ Yes Calves
- ☐ Yes Weaned Heifers
- ☐ Yes Springers
- ☐ Yes Lactating Cows
- ☐ Yes Dry Cows
- ☐ Yes Special Needs/Hospital Pen

Evaluation – Everywhere (M.E.T.A.L.) cont.

Thermal (cont.)

Protection (other than shade) or measures to address extreme weather – Evaluate all pens for provision of fans, soakers or other protections from extreme (hot or cold) weather. Depending on the time of year observation of such provisions may not be possible. In such cases mark which additional protections are currently in place in addition to any reported by the owner/manager.

- ☐ Mark YES if every pen in the age group is provided at least one additional type of protection, making note of the types of protection provided:
  - ☐ Calves: ☐ Calf Jackets ☐ Extra Feed ☐Fans ☐Heat lamps ☐Other: _____
  - ☐ Weaned Heifers: ☐ Fans ☐Soakers ☐ Other: _____
  - ☐ Springers: ☐ Fans ☐Soakers ☐ Other: _____
  - ☐ Lactating Cows: ☐ Fans ☐Soakers ☐ Other: _____
  - ☐ Dry Cows: ☐ Fans ☐Soakers ☐ Other: _____
  - ☐ Special Needs/Hospital Pens: ☐ Fans ☐Soakers ☐ Other: _____
  - ☐ Milking Parlor: ☐ Fans ☐Soakers ☐ Other: _____

Access to Water All cattle, including calves from day one, MUST be provided water. In climates where water freezes it must be demonstrated that calves are offered water in between each milk feeding. Ponds, creeks and other natural water sources will be considered acceptable if it is evident the water source is not temporary.

- ☐ Mark YES if water is available to ALL cattle including milk-fed calves, male and female

Lying Surface Mark YES if all animals in each pen of cattle have a soft substrate to lie on. Bare concrete, rocks, wood, wire and metal are not considered soft lying areas. Mark N/A if there are no milk calves on the facility.

- ☐ Yes Calves
- ☐ Yes Weaned Heifers
- ☐ Yes Springers
- ☐ Yes Lactating Cows
- ☐ Yes Dry Cows
- ☐ Yes Special Needs/Hospital Pen

Evaluation – Everywhere (Management-Based Measures)

Score the following criteria if they are seen anywhere on the farm:

Immediate Care – Observe if any animals in each pen of cattle have severe (score 3) injuries, including hock and knee injuries, severe lameness, emaciation or cattle exhibiting signs of heat or cold stress. Record the individual IDs and assess whether management was aware of their condition and were addressing the issue.

- ☐ Mark YES if animals with severe injuries are being treated

Evaluation – Everywhere (Management-Based Measures) cont.

Emergency

Timely and humane euthanasia – Chronically ill, moribund, severely injured, or distressed animals will be observed for during the entirety of the audit. Any dead animal found on the farm will be examined for evidence of humane euthanasia. Dead animals without evidence of euthanasia or record indicating an acute cause of death (e.g. bloat) are considered unacceptable regardless of age. Evidence that timeliness is lacking includes severe dehydration, paddle marks from the head or legs or severe swelling around the eyes as evidence of an inability to maintain sternal recumbency. Euthanasia must be done using free bullet, penetrating captive bolt, followed by secondary step (second captive bolt application accepted) or intravenous injection of barbiturate.

- ☐ Mark YES if there are no moribund or distressed cattle in need of euthanasia that were not tended to immediately noted on the day of the audit
- ☐ Mark YES if all dead animals observed show evidence of euthanasia or a record of euthanasia as the cause of acute death
- ☐ Mark YES if only acceptable methods of euthanasia are being used

Non-ambulatory care – All non-ambulatory cattle must be provided overhead shade and shelter, fresh feed within reach (nose length), soft and dry bedding (if not on pasture), and be isolated from other ambulatory cattle

- ☐ Mark YES if down cows are provided proper care
- ☐ Mark YES if down cows are isolated from other ambulatory cattle

Stockmanship– Caregivers will be observed continuously throughout the audit process for appropriate handling of all cattle wherever human-cattle interactions are occurring. As the audit is performed during the hours of milking, there is opportunity to observe the general handling and movement of cattle to and from, as well as within, the parlor. Try and observe at least 2 turns of the parlor. Additional areas that should be given particular attention and observed if caregivers are present include the calving area, hospital pen, calf area and loading areas. Facilities should be managed to prevent slips, falls and other injuries.

- ☐ Mark YES if animals were handled and cared for properly during the audit
- ☐ Mark YES if cattle were handled calmly and quietly
- ☐ Mark YES if there were no acts of abuse or neglect
- ☐ Mark YES if facilities are maintained to prevent slips and falls (record # and location of slips and falls)
- ☐ Mark YES if facilities are maintained to prevent injuries

Evaluation – Everywhere (Management-Based Measures) cont.

Prohibited Practices

Tail docking – Evidence tail docking is currently taking place will be evaluated by checking for freshly docked tails in the milk-fed calf, heifer and lactating cow groups paying close attention in the pens that house the first lactation cows. This prohibition extends to calf and heifer raising facilities used by the farm or the purchase of replacements.

- ☐ Mark YES if there is no evidence of routine tail docking currently taking place

Branding – Evidence that branding is currently taking place will be evaluated by checking for fresh brand wounds in the milk-fed calf, heifer and lactating cow groups paying close attention in the pens that house the first lactation cows. This prohibition extends to calf and heifer raising facilities used by the farm or the purchase of replacements.

- ☐ Mark YES if there is no evidence of routine branding currently taking place

Extra Teat Removal – Evidence that removal of extra teats is currently taking place will be evaluated by paying close attention in the parlor. Evidence of extra teats will serve as confirmation that routine removal is not taking place. If a cow is found to have any teat removed, there must be a record of procedure including the provision of local anesthetic and anti-inflammatory. This prohibition extends to calf and heifer raising facilities used by the farm or the purchase of replacements.

- ☐ Mark YES if there is no evidence of routine removal of extra teats currently taking place

Evaluation – Calf General Care & Environment

Hygiene Use the hygiene scorecard descriptions (Appendix A2) to evaluate hygiene
*See "Lying Surface" in *Cattle and Their Environment*

- ☐ Record the % scored with a hygiene score of 2
- ☐ Record the % scored with a hygiene score of 3

Feeding Strategy: Body Condition Use the body condition scorecard (Appendix A3) to evaluate for evidence of calves with poor body condition

- ☐ Record the % scored with a BCS of 2 (Goal 0%)
- ☐ Record the % scored with a BCS of 3 (Goal 0%)

Air Quality and Lighting Evaluate in buildings with sides where hygiene is scored. Mark NA if calves are not housed in buildings with sides.

- ☐ Mark YES if barns provide proper ventilation such that odors, dust and/or noxious gas (ammonia) are not evident.
- ☐ Mark YES if barns provide lighting that allows for inspection of calves and safe working.
- ☐ N/A

Water Cleanliness If troughs are used, the clean water card (Appendix B1) must be easily read while submerged 6-10" or 15-25 cm below the water surface in 3 areas. Each water source in pens scored for hygiene must be checked. If individual water sources (water buckets) score 3 buckets across all ages. It is recognized that small amounts of grain or feed may be present as a result of cattle eating. Small amounts of feed, algae along the bottom or sides of bucket are acceptable. Algae floating on the surface, fecal contamination or large amounts of feed obstructing the surface of the water resource need to be addressed. All water troughs/buckets scored must be in acceptable condition to meet this criterion.

- ☐ Mark YES if ALL water troughs/buckets scored are clean.

Evaluation – Calf Quality of Life Considerations

Socialization

- ☐ Mark YES if calves are housed in pairs or groups (either of peers or adults) by 8 days of age

Opportunity to Suck Calves should be provided with opportunities to drink milk in a species- and age-specific manner.

- ☐ Mark YES if calves are fed with a nipple, teat or from a cow for the majority of the milk-fed period
- ☐ Mark YES if calves are fed milk or milk replacer at least twice a day or offered milk continuously before the weaning process begins

Solid Feed

- ☐ Mark YES if calves are offered starter grain by 3 days of age
- ☐ Mark YES if calves are offered forage (bedding not considered as forage) by day 1

Evaluation – Calf Quality of Life Considerations cont.

Hospital/Special Needs/Chronic Pen If there is a dedicated pen for sick or injured calves, mark YES and evaluate it for the following items. If calves are housed individually, mark N/A for dedicated pen and look for evidence of illness and treatment across the entire group. If housed in groups, observe for sick or treated calves and notes whether sick calved are pulled to a separate, dedicated pen.

Dedicated Pen

- ☐ Mark YES if there is a dedicated sick pen for sick or injured calves
- ☐ N/A

Treatment Sick and injured cattle must be provided care and treatment. Write down up to 10 individual IDs of calves that appear to be sick or to have been treated and check records to make sure that all are receiving treatment and that treatment has been recorded.

- ☐ Mark YES if records confirm that each has been provided treatment
- ☐ Mark YES if all checked treatments had been recorded properly

Evaluation – Weaned Heifer General Care & Environment

Hygiene Use the hygiene scorecard descriptions (Appendix A2) to evaluate hygiene
*See "Lying Surface" in *Cattle and Their Environment*

- ☐ Record the % scored with a hygiene score of 2
- ☐ Record the % scored with a hygiene score of 3

Feeding Strategy: Body Condition Use the body condition scorecard (Appendix A3) to evaluate for evidence of weaned heifers with poor body condition

- ☐ Record the % scored with a BCS of 2
- ☐ Record the % scored with a BCS of 3 (Goal 0%)

Air Quality and Lighting Evaluate in buildings with sides where hygiene is scored. Mark NA if weaned heifers are not housed in buildings with sides.

- ☐ Mark YES if barns provide proper ventilation such that odors, dust and/or noxious gas (ammonia) are not evident.
- ☐ Mark YES if barns provide lighting that allows for inspection of weaned heifers and safe working.

Water Cleanliness If troughs are used, the clean water card (Appendix B1) must be easily read while submerged 6-10" or 15-25 cm below the water surface in 3 areas. Each water source in pens scored for hygiene must be checked. If individual water sources (water buckets) score 3 buckets across all ages. It is recognized that small amounts of grain or feed may be present as a result of cattle eating. Small amounts of feed, algae along the bottom or sides of bucket are acceptable. Algae floating on the surface, fecal contamination or large amounts of feed obstructing the surface of the water resource need to be addressed. All water troughs/buckets scored must be in acceptable condition to meet this criterion.

- ☐ Mark YES if ALL water troughs/buckets scored are clean.

Evaluation – Weaned Heifer Quality of Life Considerations

Tiestall Release If heifers are housed in tiestalls, they should be released from stalls daily, weather permitting. Mark N/A if heifers are not in tiestalls.
*See "Movement" in *Cattle and Their Environment*

- ☐ Mark YES if the owner reports that heifers are released from tiestalls daily or if you observe that the practice is in place or evidence to support the practice (outdoor fenced area accessible to heifers with evidence of manure or heifer traffic).
- ☐ N/A

Evaluation – Weaned Heifer Quality of Life Considerations cont.

Hospital/Special Needs/Chronic Pen If there is a dedicated pen for sick or injured heifers, mark YES and evaluate it for the following items. If heifers are housed individually, mark N/A for dedicated pen and look for evidence of illness and treatment across the entire group.

Dedicated Pen

- ☐ Mark YES if there is a dedicated sick pen for sick or injured heifers
- ☐ N/A

Treatment Sick and injured cattle must be provided care and treatment. Write down up to 10 individual IDs and check records to make sure that all are receiving treatment.

- ☐ Mark YES if records confirm that each has been provided treatment
- ☐ Mark YES if all checked treatments had been recorded properly

Evaluation – Springer General Care & Environment

Hygiene Use the hygiene scorecard descriptions (Appendix A2) to evaluate hygiene
*See "Lying Surface" in *Cattle and Their Environment*

- ☐ Record the % scored with a hygiene score of 2
- ☐ Record the % scored with a hygiene score of 3

Feeding Strategy: Body Condition Use the body condition scorecard (Appendix A3) to evaluate for evidence of springers with poor body condition

- ☐ Record the % scored with a BCS of 2
- ☐ Record the % scored with a BCS of 3 (Goal 0%)

Air Quality and Lighting Evaluate in buildings with sides where hygiene is scored. Mark N/A if springers are not housed in buildings with sides.

- ☐ Mark YES if barns provide proper ventilation such that odors, dust and/or noxious gas (ammonia) are not evident.
- ☐ Mark YES if barns provide lighting that allows for inspection of springers and safe working.
- ☐ N/A

Water Cleanliness If troughs are used, the clean water card (Appendix B1) must be easily read while submerged 6-10" or 15-25 cm below the water surface in 3 areas. Each water source in pens scored for hygiene must be checked. If individual water sources (water buckets) score 3 buckets across all ages. It is recognized that small amounts of grain or feed may be present as a result of cattle eating. Small amounts of feed, algae along the bottom or sides of bucket are acceptable. Algae floating on the surface, fecal contamination or large amounts of feed obstructing the surface of the water resource need to be addressed. All water troughs/buckets scored must be in acceptable condition to meet this criterion.

- ☐ Mark YES if ALL water troughs/buckets scored are clean.

Evaluation – Springer Quality of Life Considerations

Tiestall Release If springers are housed in tiestalls, they should be released from stalls daily, weather permitting. Mark N/A if springers are not in tiestalls.
*See "Movement" in *Cattle and Their Environment*

- ☐ Mark YES if the owner reports that springers are released from tiestalls daily or if you observe that the practice is in place or evidence to support the practice (outdoor fenced area accessible to springers with evidence of manure or springer traffic).
- ☐ N/A

Low Stress Heifer Transition

- ☐ Mark YES if low stress heifer transition practices are in place. Note which practices are in place. Evidence may be in the form of observations, employee interviews or as documented in an SOP.
  - ☐ Pre-freshening parlor acclimation
  - ☐ Dedicated first lactation pen/group
  - ☐ Other: _____

Evaluation – Springer Quality of Life Considerations cont.

Hospital/Special Needs/Chronic Pen If there is a dedicated pen for sick or injured springers, mark YES and evaluate it for the following items. If springers are housed individually, mark N/A for dedicated pen and look for evidence of illness and treatment across the entire group.

Dedicated Pen

- ☐ Mark YES if there is a dedicated sick pen for sick or injured springers
- ☐ N/A

Treatment Sick and injured cattle must be provided care and treatment. Write down up to 10 individual IDs and check records to make sure that all are receiving treatment.

- ☐ Mark YES if records confirm that each has been provided treatment
- ☐ Mark YES if all checked treatments had been recorded properly

Evaluation – Lactating Cow General Care & Environment

Hygiene Use the hygiene scorecard descriptions (Appendix A2) to evaluate hygiene
*See "Lying Surface" in *Cattle and Their Environment*

- ☐ Record the % scored with a hygiene score of 2
- ☐ Record the % scored with a hygiene score of 3

Feeding Strategy: Body Condition Use the body condition scorecard (Appendix A3) to evaluate for evidence of cows with poor body condition

- ☐ Record the % scored with a BCS of 2
- ☐ Record the % scored with a BCS of 3 (Goal 0%)

Locomotion Evaluate locomotion using the locomotion scorecard (Appendix A6) and the appropriate sample methodology for the number of lactating cows in the pen/group being scored. Record the total percent of cows scoring a 2 and 3 separately.

- ☐ Moderate Lameness – Record the % of cows with a locomotion score of 2 (moderately lame) (Goal ≤10%)
- ☐ Severe Lameness – Record the % of cows with a locomotion score of 3 (severely lame) (Goal 0%)

Hocks Use the scorecard (Appendix A4) to evaluate hocks
*See "Lying Surface" in *Cattle and Their Environment*

- ☐ Record the % of the cows scored have a hock score of 2
- ☐ Record the % of the cows scored have a hock score of 3 (Goal 0%)

Knees Use the scorecard (Appendix A5) to evaluate knees
*See "Lying Surface" in *Cattle and Their Environment*

- ☐ Record the % of the cows scored have a knee score of 2
- ☐ Record the % of the cows scored have a knee score of 3 (Goal 0%)

Injured Tails

- ☐ Record the % of injured tails in the pen of cows scored for hygiene (Goal <5%)

Air Quality and Lighting Evaluate in buildings with sides where hygiene is scored. Mark N/A if cows are not housed in buildings with sides.

- ☐ Mark YES if barns provide proper ventilation such that odors, dust and/or noxious gas (ammonia) are not evident.
- ☐ Mark YES if barns provide lighting that allows for inspection of springers and safe working.
- ☐ N/A

Evaluation – Lactating Cow General Care & Environment cont.

Water Cleanliness If troughs are used, the clean water card (Appendix B1) must be easily read while submerged 6-10" or 15-25 cm below the water surface in 3 areas. Each water source in pens scored for hygiene must be checked. If individual water sources (water buckets) score 3 buckets across all ages. It is recognized that small amounts of grain or feed may be present as a result of cattle eating. Small amounts of feed, algae along the bottom or sides of bucket are acceptable. Algae floating on the surface, fecal contamination or large amounts of feed obstructing the surface of the water resource need to be addressed. All water troughs/buckets scored must be in acceptable condition to meet this criterion.

- ☐ Mark YES if ALL water troughs/buckets scored are clean.

Evaluation – Lactating Cow Quality of Life Considerations

Tiestall Release If cows are housed in tiestalls, they should be released from stalls daily, weather permitting. Mark N/A if cows are not in tiestalls.

*See "Movement" in *Cattle and Their Environment*

- ☐ Mark YES if the owner reports that cows are released from tiestalls daily or if you observe that the practice is in place or evidence to support the practice (outdoor fenced area accessible to cows with evidence of manure or cow traffic).
- ☐ Mark YES if trainers do not touch any of the observed cows while standing in a normal position.
- ☐ N/A

Exercise Cattle should be provided time free from stalls and off concrete at some period.

- ☐ Mark YES if cattle are provided an area off concrete (dry lot, pasture, bedded pack) where they can move about freely.

Time Budget – Record the number of hours the pen scored for locomotion was away from the pen for milking and multiply by the number of times a day cows are milked.

- ☐ Mark YES if the total time per day for milking is <4hours.

Stocking Density Count all usable stalls in the lactating cow pen scored for hygiene and compare against the number of cows reported in that pen. If there seems to be more cows than you were told, count all cows in the pen.

- ☐ Mark YES if cattle in freestall and tiestall housing have 1 or more useable stall per cow

Hospital/Special Needs/Chronic Pen If there is a dedicated pen for sick or injured cows, evaluate it for the following items. If cows are housed individually, mark N/A for dedicated pen and look for evidence of illness and treatment across the entire group.

Dedicated Pen

- ☐ Mark YES if there is a dedicated sick pen for sick or injured cows
- ☐ N/A

Evaluation – Lactating Cow Quality of Life Considerations cont.

Hospital/Special Needs/Chronic Pen (cont.)

Lying Space Measure the area provided for lactating cows in the hospital pen.
*See "Stocking Density" in *Cattle and Their Environment*

- ☐ Mark YES if the area provides at least 100 sq. ft bedded area per cow (9.3m2/cow), unless animals are individually housed (tiestalls, box pens).

Bunk Space/Feeding Area Measure the bunk space provided for lactating cows in the hospital pen.

- ☐ Mark YES if the feeding area provides at least 30" (75 cm) of accessible bunk space per cow, or 1 stanchion (head lock) per cow.

Treatment Sick and injured cattle must be provided care and treatment. Write down up to 10 individual IDs and check records to make sure that all are receiving treatment.

- ☐ Mark YES if records confirm that each has been provided treatment
- ☐ Mark YES if all checked treatments had been recorded properly

Cattle and Their Environment

Several of these criteria, ordered alphabetically, are common across audits and are noted as critical criteria, including access to water, abuse and neglect, timely and humane euthanasia, appropriate care for non-ambulatory cattle, and tail docking. However, definitions may not always be clear. If no specific definition is offered, they should ask the customer for clarification. Each audit may also specify the consequence of failing to meet a critical criterion. *Auditors should take care to clarify with the client which practices are considered prohibited and how they would like critical non-conformities to be managed and communicated.*

Abuse or Neglect (Critical Criterion)

For PAACO training we will apply the following definition: Evidence of abuse or neglect during an audit, if not reprimanded (without evidence that there is a process in place to intervene and correct the problem) is considered a critical non-conformance. **Evidence of abuse** includes, **but is not limited to** dragging a live animal, intentional application of a prod or sticks to sensitive parts of the animal, deliberate slamming of gates on animals, hitting[a] or kicking[b] or maliciously driving[c] animals over another, repeated use of an electric prod on an individual animal, restraining a cow with nose tongs, moving cows with hip lifts[d], spraying cows with water in the face with a hose or witnessing the twisting a tail beyond 90 degrees or in such a way that the tail breaks. It is unacceptable to move calves by dragging or by pulling their ears. Calves should either be picked up by wrapping one arm in front of the chest and one arm behind the rump and carried or moved placed in a wheeled carrier. **Evidence of neglect** includes but **is not limited to** with-holding treatment to individual animals for broken limbs, dystocia, prolapses or observing more than 10% of any age group with a severe condition (emaciation or severe lameness) without proof of treatment or remediation. Sleds and matts may be used to move cattle, provided they are restrained, in which case the SLED or MATT may be dragged, but not the cow.

[a]**Hitting defined:** when an arm (or any driving aid) swings back, behind the frontal plane of the body and then forward or is lifted above shoulder level and then down.
[b]**Kicking defined:** when the leg (or any driving aid) as swung back, behind the frontal plane of the body and then forward.
[c]**Driving aids defined:** it is universally understood that shaker paddles and canes are considered driving aides. Sticks with a flag or bag on the end may also be used. All other objects including but not limited to gates, pipes, buckets, pitch forks, towels, knives, screwdrivers, pens and hoses are NOT accepted as driving aids.
[d]**Moving with hip lifts defined:** when a cow is transported **any distance** to another location within the pen or elsewhere in the facility with the hip lift serving as the sole support device. Hip lifts may be used to raise the cow from a laying position to facilitate the placement of a mat, sled or rope or to reposition the cow off the downside.

Access to Water – All ages of cattle must have access to potable water (Critical Criterion)

Since there remains no sound scientifically proven requirement for a specific volume, length or number of waterer spaces to access, many audits require, at the critical level, that all cattle merely have access to water. Water cleanliness may be considered important, but not critical and therefore considered under continuous improvement requiring a corrective action be made. The age at which water is required may

vary between audits. It is the responsibility of the auditor to make themselves familiar with each audits requirement and evaluate success accordingly.

There is no formal or agreed upon measure of gross contamination of water cleanliness. For training purposes, PAACO will apply a method applied in the Danone audit to consistently evaluate the admittedly subjective general cleanliness of the water.

Audits designed for pasture-based systems may also include a requirement that water be available within a certain distance in the pasture or some other specific manner that will ensure that cattle are not limited in their access to water.

Due to the challenges of accurately measuring the fill rate or volume of waterer's audits do not typically include measures of water volumes, pressure or fill rates. However, auditors are encouraged to make note of any suspect deficiencies in either as it may be of use to the client and farmer. This approach should be taken in general. While it is important to avoid "audit creep" it is also important to consider the primary goal of every animal welfare audit, that is, to improve welfare. If an auditor observes what they, in their experienced perspective, considered to be an area of concern they may make note of the observation for the record.

Air Quality and Lighting

All cattle should be in an environment with fresh air and lighting bright enough to allow for inspection of animals and pen conditions.

Bunk Space/Feeding Area

Reducing the space available for cows to eat increases competition. It has been shown that doubling feeding space from 0.5 m to 1.0 m per cow reduced by half the number of aggressive interactions while feeding; and these effects were greatest for subordinate cows. During peak feeding times sick cows spend less time eating than do cows that are healthy. Providing a head lock feed barrier mitigates the effects of aggression, particularly for subordinate cows. Although there is no research that has directly identified the minimum amount of feed bunk space required per sick cow, general industry consensus is that 24" (60 cm) is the minimum required for each healthy cow; thus, this audit requires 30" (76 cm) of feed bunk space per sick or compromised cow.

Enrichment

Cows should be provided elements in their primary environment that allow them to experience pleasure. This may be in the form of play toys, brushes, feed puzzles or other as yet described enrichments specific to cattle. Anecdotally, cattle will use trees, fence posts and other objects for scratching, especially hard to reach parts of their body. In housed systems, adult dairy cows will use a mechanical or stationary brush, many within a day of installation. They will push a weighted gate, indicating that they are motivated to access a brush, at levels comparable to fresh feed.

Exercise

The opportunity to move and exercise freely without risk of injury is an important component of animal welfare and allows cows to perform a wide variety of natural behaviors, such as social grooming, romping

and exploration of the environment. While there are numerous benefits of providing outdoor access in a variety of different forms, it is often difficult to delineate the benefits of exercise per se, from grazing and other positive effects of greater freedom from housing. Indeed, many of the positive reports of exercise may reflect the benefits of the release of animals from housing where movement is restricted, such as the use of tiestall barns, where lack of investment in cow comfort may be apparent. While some exercise appears beneficial, too much exercise – such as walking long distances whether from a pastor or a confined barn to and from the parlor, each day can prove to be stressful, negatively impacting milk yield and elevating somatic cell count.

Overall, there appears to be beneficial aspects of the provision of the opportunity for a moderate amount of exercise over and above simple freedom from inadequate housing for heifers and lactating dairy cattle, provided that it is not too prolonged or excessive.

Feeding Strategy - Body Condition

Cattle should be fed such that they do not experience frequent bouts of hunger and calves should have the opportunity to satisfy motivations to suckle and forage. Body condition can be used as a high-level indicator of the overall quality of calf care as it may be impacted by several critical management areas including dry cow, calving, colostrum and feeding management and sanitation.

Milk quantity provided to calves varies from farm to farm but is commonly approximately 10% of a calf's body weight (BW). However, a growing body of research indicates that calves gain more weight, have less disease, play more, and grow more efficiently when given approximately 20% of their BW in milk. When provided with low milk allowances, calves will make more unrewarded visits to the milk feeder which indicates hunger.

Handling

All cattle should be handled gently, calmly, and quietly and cattle in need of care should be identified, provided prompt treatment and housed appropriately for their condition (i.e. as to avoid long walks to the milking parlor, feed or water access). Facilities should be managed to prevent slips, falls and other injuries. Caregivers will be evaluated to be sure that cows are moved calmly and quietly with proper restraint and without excessive force. Slips and falls will be recorded, noting why and where they occurred. Review of audit results demonstrate that slips and falls are a rare occurrence but are worth noting for that direction and feedback may be given to the farm. Slips and falls due to poor stockmanship should be considered under this section. Excessive force is considered abuse and should be recorded as such.

Hospital/Special Needs/Chronic Pens

The idea of "quality of life" and a "life worth living" are key considerations when evaluating these groups of animals. Whether they are called "chronic pens", "special needs pens" or hospital pens, these are areas where, if close attention is not paid, animals may be allowed to linger when treatments are either not practical or simply not likely to be effective. Choosing to begin treatment does not signal an end to the daily evaluation and consideration of timely euthanasia as the acceptable end point. There are times when cows, treated with the best of intentions, don't recover as hoped or anticipated. In these instances, it is not uncommon to see futile treatment efforts continue, additional treatments initiated and, in the end,

the cow is kept on farm until the drug withdrawal period has been met at which time they are sent to market or slaughter even if not fit for transport. Without question, withdrawal times should be considered when making proactive culling decisions. However, dairy cattle that have not responded to treatment as expected should not be made to endure additional suffering while waiting out the meat with-hold requirements to capture the salvage value of the cow or avoid other financial losses. Here, we will evaluate hospital pens in all age classes to assess whether care is being given. Evaluating the health and condition of each individual animal is not in the scope of an audit and should be undertaken by a licensed veterinary professional. See "Timely and Humane Euthanasia" as well.

(a) Dedicated pen - When ill, cattle will seek isolation (e.g. lying in a corner of covered pen) if given the opportunity. In addition to their motivation to avoid other animals during this vulnerable time, dedicated sick pens provide the opportunity for caregivers to frequently monitor at-risk animals and those undergoing treatment.

(b) Treatment - Records will be evaluated for cattle in each hospital pen. Cattle being kept in these pens should have records of some type of health intervention or at minimum a record of the condition and care if no specific treatment (i.e. drug) is given.

Injured Tails

Injured tails (commonly referred to as "broken tails") are a potential sign of poor stockmanship and rough handling. It has been reported a prevalence of 3.3% of cattle in tiestall farms. While some have asserted that tails may become injured through interaction with the environment, or by being stepped on by other cows, data has demonstrated that farms of all systems and sizes are able to achieve 0% injured tails. The bottom 10% of farms had greater than or equal to 28%. Farms with 5% injured tails benchmark in the Top 25%, farms with 5-18% benchmark in the middle 50%.

Locomotion

Fewer than 10% of the scored lactating cows should be moderately lame (score 2). Reports suggest that interventions to reduce the risk for lameness are lagging in many areas of the world. The worldwide prevalence of lameness, cows showing noticeable weight transfer off the affected limb, in dairy herds is approximately 23% across studies based in Austria, Brazil, Canada, China, Finland, France, Germany, Italy, Netherlands, New Zealand, Norway Sweden, Spain, UK and the US), with a trend toward lower prevalence in grazing systems, and a higher prevalence in confinement housed freestall herds. The enormous variation between and within countries and production systems suggests that lameness is not an inevitable consequence of current dairy management and housing practices.

Dairy producers tend to underestimate the amount of lameness in their herds. By setting goals that match the achievable levels of lameness observed in the top performers of dairy herds and using the degree of non-conformance to determine the interval between re-evaluations, it was shown that locomotion assessments will provide the motivation required to reduce lameness prevalence in our dairy industry.

Low Stress Heifer Transition

Farms should develop management practices to facilitate the transition of heifers into new groups and environments in a way that minimizes stress. This includes weaning, feed changes and experiencing new

environments including but not limited to the milking parlor and multiparous cow groups. First lactation dairy heifers experience transitions to different housing, feed rations, new social environments, human interaction, and other environments including the milking parlor.

Heifers trained 10 days prepartum to enter the milking parlor, as opposed to heifers entering the parlor for the first time after calving, were noted to step and kick less often during milking than the untrained heifers. Untrained heifers were more likely to exhibit behaviors associated with aversive experiences, including tail carriage (hanging versus tucked between back legs), ear posture (flat versus hanging or turned forward), head posture (relaxed versus lowered) and eye aperture (half open versus wide open).

Lying Surface

All housing should be maintained in a manner to provide access to a soft, dry resting area that minimizes injury. **The "dryness" of the resting areas is typically evaluated using hygiene.** Lying "surface" for calves and heifers will be evaluated by the presence of floor covering if not housed on pasture or grass. Acceptable surfaces are those that are not hard and filthy - not bare metal, wire, wood, stone. Concrete, rubber mat, mattress, waterbed lying areas without bedding substrate to avoid injury are not acceptable. Cattle show clear preferences for soft and dry lying areas and lying time is reduced when surfaces are hard or wet. Unyielding and poorly bedded lying surfaces are the key risk factor for leg injuries, as evidenced by swelling, open wounds and hair loss on the hock and knees. The "softness" of the resting area is evaluated in lactating cows using hock scores. There is considerable variation in the degree of hock injuries reported for dairy cattle worldwide. The range between herds is 0 to 100% with an overall mean ~ 54%.

Hock injuries are multifactorial, but the most common risk factor is the hardness or abrasiveness of the lying surface. Hock injuries have received more attention than injuries on other parts of the body, and there is no consistent scoring system used. Many scoring systems treat hock injuries as a progression: hairless patch to hairless patch and/or swelling or ulceration. However, little work has evaluated if etiology progresses in this manner, nor what the effect of scoring system has on estimates of prevalence. For example, the size of the hairless patch is often scored with a threshold (10 and 25 mm are most common), but no work has determined the biological importance of these injuries (nor these thresholds) to the animals.

Movement

All cattle should have enough space to move freely. They should be able to turn fully around and groom all parts of their body. Tethers may be used provided the tether is long enough that cattle can turn fully around and access shade/shelter when needed. Tiestalls do not meet this requirement, including if animals are kept in tiestalls for only part of the year.

When untethered, cattle use this time to groom parts of the body that they cannot reach while tied, interact with other cows and to move about. Tiestall farms that provide outdoor access have lower levels of lameness and reduced risk of hock injuries than those that do not. Cattle with daily exercise have fewer illnesses requiring veterinary attention and fewer hock injuries than those with no exercise. The literature overall indicates that being released from tiestalls/stanchions is beneficial from an animal welfare perspective compared to being tied without this opportunity.

Electric cow trainers should not touch animals in a standing position. Cattle find electric shock aversive. Their use is positively associated with the prevalence of dirty cows on tiestall farms and is a risk factor for mastitis, possibly because they are seen as a way to improve hygiene and thus used on farms with this challenge. In addition, their use is also a risk factor for hock and soft tissue injuries.

Non-Ambulatory Care – non-ambulatory cows must be provided protection and care to avoid suffering during recovery (Critical Criterion)

Cattle that cannot rise without assistance or stand or walk normally unassisted are considered non-ambulatory. The failure to provide proper care and treatment of non-ambulatory cattle continues to serve as a major source of criticism of the dairy industry. While caring for non-ambulatory cattle can be a challenge, it should be considered a medical emergency and must be done humanely. This requires that every farm have an established procedure that provides both the initial steps and follow-up treatment for each cow. The AABP has established guidelines for the care of non-ambulatory cattle that must be incorporated into the SOP (https://www.aabp.org/Resources/AABP_Guidelines/non-ambulatory2020.pdf).

(a) Care – All non-ambulatory cattle must be provided overhead shade and shelter, fresh feed within reach (nose length) and soft, dry bedding (if not on pasture). Non-ambulatory cattle must be moved, or shade must be moved so that they remain beneath shade to protect them from excessive heat such that their respiratory rate remains within normal limits (not greater than 60 breaths per minute). Water must be available and managed such that hydration is maintained. Hydration will be evaluated by using the "skin tent." Ideally, water is provided continuously using low-profile troughs with a wide base to avoid tipping. (See Appendix A1 for direction on performing and interpreting the skin test test)

(b) Protection **-** Non-ambulatory cattle must be isolated from ambulatory cattle to minimize risk of injury from other cows. Severely lame cows may be housed with non-ambulatory cows as they are not likely to move fast enough to risk walking over/on other cattle in the pen.

Opportunity to Suck

Calves are motivated to perform natural sucking behavior and are motivated to drink approximately 20% of their body weight in milk or milk replacer in a series of meals, spread out over time. Historically, provision of milk has been done using buckets, on at least some farms, and some farms may only offer 1 meal/day. Bucket feeding does not allow calves to show their natural sucking behavior, and may lead to frustration, non-nutritive sucking, and poor health, such as presence of diarrhea. Though some have described access to milk via a teat or simply access to artificial teats as enrichment, feeding calves with teat bottles, particularly when milk is offered at least twice a day or continuously, promotes natural nursing behaviors such as sucking and head-butting, and reduces abnormal oral behaviors like cross-sucking and non-nutritive oral manipulation. As sucking is part of a calf's natural behavior, nipple feeding should be looked at as a necessity, not an enrichment.

Prohibited Procedures

(a) Tail Docking – routine tail docking or purchasing cattle with docked tails is prohibited (Critical Criterion)

The practice of tail docking began in New Zealand and has since been largely limited to the US with some adoption in Australia. There is no evidence that tail docking provides any benefit to the cow through improved udder health or hygiene. The procedure appears to cause some acute pain, but chronic pain has not been evaluated beyond the presence of neuromas. Docked cattle have more flies on their hind end. Although the consequences of increased flies on behavior is not well studied, increased fly load on beef cattle housed on rangeland has been reported to cause increased restlessness and tail swishing, and decreased feeding behavior. Worker comfort is often cited as a reason to dock, but there is no scientific evidence that has addressed this aspect of tail docking cattle.

(b) Branding (Critical Criterion)

Hot-iron and freeze branding are painful at the time of the procedure. Hot-iron brands remain more sensitive than unbranded tissue throughout the healing process. Little is known about how to control either the immediate or long-term pain associated with this procedure, thus branding should be limited to meet state or export requirements and is not allowed to be used for individual identification and never done on the face. Branding requirements are managed on a state-by-state basis in the US and rules may differ depending on purpose and pasture or range access. We are not aware of any state in the US that requires herd level or individual branding. While there are 14 “brand states” in the US a “brand requirement” does not necessarily mandate that cattle must be branded. Rather “brand inspection” is required, even on unbranded cattle where any form of animal ID is acceptable. The brand program is an asset protection program only. Washington was the first state to allow for a brand or an official electronic ID tag for asset protection. This change was largely driven by the dairy industry that mostly does not support branding of their animals. Montana law does not require the branding of any animals. While the law certainly favors this system of identification in resolving disputes regarding ownership, it is not mandatory. In some states, the identification requirement applies to range livestock (pasture or extensively managed) regardless of breed (dairy or beef). If there is any question, farm owners can write to the department of livestock in the state and request RFID identification only.

Socialization

In North America, most pre-weaned heifer calves are housed individually (69.7% of US operations), with outdoor hutches (white plastic houses suitable for one calf) or pens being the most common form of housing (37.9% of 1261 dairies). Some have argued that calves housed individually are easier to handle and hand-fed calves are reported to be more readily approached by people. However, others have shown individual calves as being more fearful when confronted with an unfamiliar calf compared to pair-housed calves. Other research also provides evidence that individually housed calves on farms are more fearful of novelty than group-housed calves.

An alternative to individual housing is to house calves in small groups, for large groups can present health risks. A study in the US also found that groups of calves greater than 7 had higher mortality rates than smaller groups and individually housed animals. Housing calves in small groups may offer benefits to farmers by allowing them to save time by taking care of animals as groups, especially with automatic milk

feeding. Perhaps most importantly, group housing offers benefits to calves, such as improved growth and social interactions.

Solid Feed

Calves are often underfed as part of standard practice. Starter grain is a non-milk source of calories, and is used to help transition to a solid food diet. A small amount of high-quality forage should be provided to milk-fed calves from day one. Evidence about the effects of forage provision on rumen development are mixed and influenced by forage quality and liquid diet volume. On the whole, providing forage does not seem to harm rumen development, growth or health. There is evidence that provision of forage from day one results in more rumination and fewer abnormal oral behaviors. Calves will begin to consume even small amounts from birth, so this forage should be available from birth.

Stocking Density

Space allocation for bedded areas has received little attention in adult dairy cows. Lying times on rubber mats are highest (13.8 h/24 h) and lowest at 113 sq. ft. (10.5 m^2) and 32 sq. ft. (3.0 m^2), respectively; intermediate stocking densities also result in an intermediate amount of rest. Aggressive behavior and interruptions of lying behavior decline when more space is provided, particularly once each cow has 65 sq. ft. (6.0 m^2). Experimental studies show that providing one or more stalls per cow allows higher lying times and less competition than overstocking.

Thermal

(a) Shade/Shelter

Every pen of every age group should be provided access to shelter/shade. This may include permanent shade structures, patches of trees or temporary cloth (raised seasonally). Groves or clusters of trees may be considered shade/shelter when not barren. Rows of trees may be considered a wind break but not shade. The area of shade provided will not be measured at this time as it is the ability to accurately measure the square feet of shade available is difficult and may be impacted by the position of the sun at the time of the audit.

Shelter provides both protection from heat stress in the form of shade and protection from rain and snow. Shade seeking is one of the first responses to solar radiation and mitigates increases in physiological responses to heat, such as respiration rate and body temperature. Dairy cattle are motivated to seek shade in warm ambient conditions, will choose seeking shade over other important behaviors, such as rest and show preferences for shade that provides relatively more protection from solar radiation. For cattle on pasture, trees may increase grazing time. Heat stress reduces lying behavior and increases water intake and shifts feeding times to cooler periods during the day. Thus, it reduces milk production and fertility, and negatively impacts wellbeing. Heat stress during the dry period compromises placental development, lactational performance and immunity of cows after calving. Calves born to heat stressed cows tend to weigh less at birth, have below average reproductive efficiency, will produce less milk and have compromised passive immunity and immune function. While housing is often considered as a shade provision it is worth noting that housing may also be a source of heat stress therefore all cattle will observed for signs of severe thermal stress and whether additional actions have been taken to provide relief.

(b) Protection (other than shade) or measures to address extreme weather

All age groups should be provided additional protection from inclement hot and cold weather. This may include overhead fans, deep bedding, heat, calf jackets, or increase in calories fed. It should be noted if any pen (including the milking parlor) or group of animals show signs of heat stress (respiration > 80/min, panting, salivating) or cold stress (shivering).

The thermo-neutral zone cattle dependent on age, nutrient intake, amount of subcutaneous fat, and length and thickness of hair coat. Extreme climatic conditions cannot be compensated by thermoregulatory mechanisms of calves and result in increased mortality and morbidity, and reduced weight gain, performance, and long-term survival of dairy calves. Thermal stress has a negative impact on animal welfare.

During winter, placement of wet calves in outdoor hutches is not recommended. Provision of enough dry bedding to reduce cold stress and drafts in calves is essential when housing calves, particularly during cold conditions. During summer, calves housed in hutches are susceptible to heat stress depending on the environmental temperature.

When dairy cows accumulate heat load, production and welfare problems result, including increased body temperature, decreased milk yield and reduced fertility, and in extreme cases, mortality. It is incumbent on the dairy herd owner to provide additional heat abatement measures in hot weather, typically when the Temperature Humidity Index (THI) exceeds 68 and/or when respiratory rates exceed 60 breaths per minute.

Time Budget

Milking time outside the pen of origin should not exceed 4 h per day for any cow. No cow should be taken away from access to feed or a place to rest for more than 2 h per day other than to be milked. While it is not practical to evaluate the cows actual time budget during the audit, attention will be paid to milking time specifically. The time required to milk the pen scored for locomotion, starting when they were first brought towards the parlor until the last cow milked returns to the pen of origin will be recorded. The time required to milk the scored pen will be multiplied by the number of times a day cows are milked and should be less than 4 hours per day. Cows value lying time and it is considered a highly priority behavior and likely confers health benefits, especially in free stalls systems, where the alternative is standing on wet concrete. The opportunity to lie down on a given farm, through facility- and protocol-based measures, may be the best way to gauge if cow motivation to lie down can be fulfilled. Opportunities to lie down are also affected by management of how cows spend their time. Cows lose opportunities to rest during milking or while restrained in headlocks. There is clear scientific evidence that cows show more motivation to lie down after being forced to stand for 3+ h at a time.

Timely and humane euthanasia – animals sick or injured and not likely to recover must be provided a humane death in a timely manner (Critical Criterion)

Euthanasia is a valuable management tool utilized on dairies to end the suffering of sick or debilitated cows. Euthanasia should be implemented if an animal's pain cannot be adequately alleviated and if there

is a limited chance of recovery. To be humane, euthanasia should be quick, painless, and administered by a trained individual in accordance with the AVMA and AABP humane euthanasia guidelines (AABP2023euthanasia.indd). Cows or calves that are chronically ill, moribund, severely injured or distressed or with a catastrophic injury (fractured limbs) are considered an emergency and must receive **immediate action which includes either prompt medical treatment by a veterinarian or euthanasia**. Moribund cattle are those which are near death and are often found lying flat on their sides, unable to maintain themselves in sternal recumbency (sitting upright with their head elevated).

Water Cleanliness

All cattle should have access to clean water free of gross contamination including feed or feces.

Research supports the provision that the water provided for drinking be clean, fresh and potable and that cattle will actively compete for access to water, particularly in hot weather. It has been reported that when cattle were provided a choice of freshwater or water contaminated with 0.005 % fresh manure by weight, they avoided the contaminated water. When water is contaminated with 0.05 or 1.0 mg/g of manure, lactating cows reduced water intake by 10 and 28%, respectively. When given a choice, cows consumed 99% of their water from the clean option over water contaminated with 1.0 mg/g manure. Moreover, growing yearling heifers provided with clean drinking water gained more weight than heifers provided with water from a pond. If water contains compounds that diminish palatability, cattle will reduce their water consumption or seek alternative water sources. These findings justify the additional assessment that the water available be clean and free of gross contamination.

There is no formal or agreed upon measure of gross contamination of water cleanliness. Thus, we are teaching the method proposed in the Quality and Care audit to consistently evaluate the admittedly subjective general cleanliness of the water. If troughs are used, the 'clean water sheet' must be easily read while submerged 6-10" or 15-25 cm below the water surface in 3 areas. Individual water sources, including water buckets used for calves, should be free from manure or other gross contamination. It is recognized that small amounts of grain or feed may be present as a result of cattle eating. Small amounts of feed, algae along the bottom or sides of bucket are acceptable. Algae floating on the surface, fecal contamination or large amounts of feed obstructing the surface of the water resource need to be addressed.

4. Appendices

A. OUTCOME-BASED MEASURES

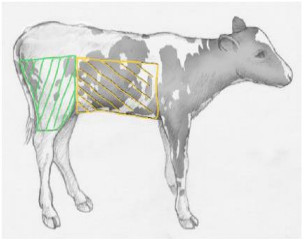
Skin Tent Evaluation

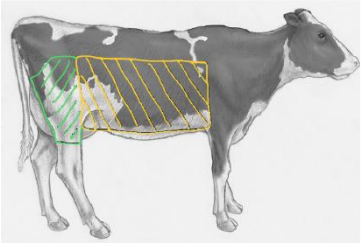
Performing the Skin Tent Test: Non-Ambulatory cows will be checked to see that they have been provided adequate food, water and shelter. Non-Ambulatory cows without access to water will become dehydrated. Hydration Status will be checked using the "Skin Tent" test.

This should only be done if safe and when cows can be approached without causing distress or struggling.

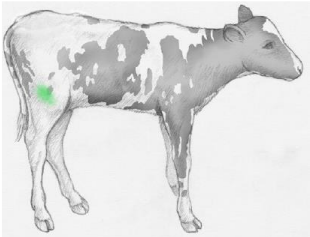
Score Description	
Step 1 - Pinch the skin of the neck, pulling up gently	
Step 2- Release the Skin. The skin of cows that are well hydrated will quickly return to a normal, smooth position on the neck once the pinch is released.	 **NORMAL Hydration**
The skin of cows that are dehydrated will remain pinched, raised or wrinkled after releasing the pinched skin. A fresh bucket of water may also be offered to the cow. When a cow consumes large amounts of water when presented it is indicative that the cow has not been provided enough access to water. **THIS IS A CRITICAL NON-CONFORMANCE**	 **DEHYDRATION**

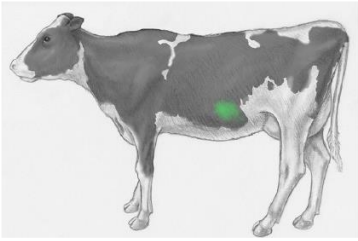
Hygiene Score Description



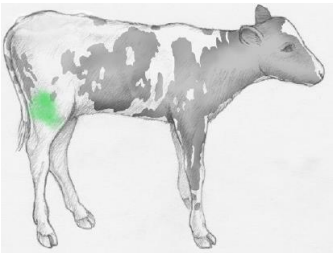


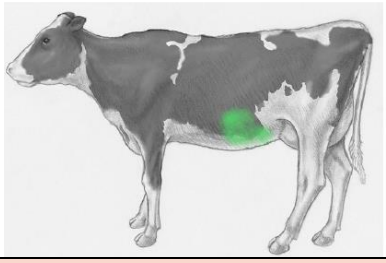
Hygiene scoring evaluates if cattle have a comfortable space to lay that is clean and dry. The areas of the body that contact the lying area will be evaluated and are divided into two areas: The side and thigh. The tail head, top-line and lower legs are not evaluated as part of lying space cleanliness. Using the sample guidelines score calves, weaned heifers, springers, and lactating cows. If both sides are visible, score the worst side.

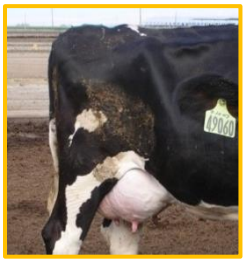




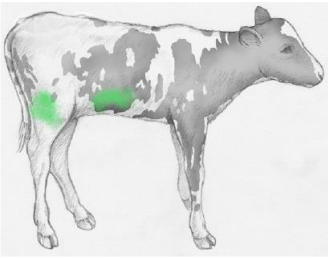
SCORE 1: Acceptable Manure or mud (may be dried) on flank or hind leg is less than 11" or 28 cm (adults, springers) or 5.5" or 14 cm (milk-fed calves, weaned heifers) in diameter.

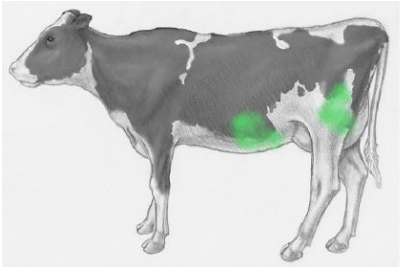






SCORE 2: Moderate Area of manure/mud (may be dried) greater than 11" or 28 cm (adults, springers) or 5.5" or 14 cm (milk-fed calves, weaned heifers) in diameter in 1 of 2 scored areas on the same side.





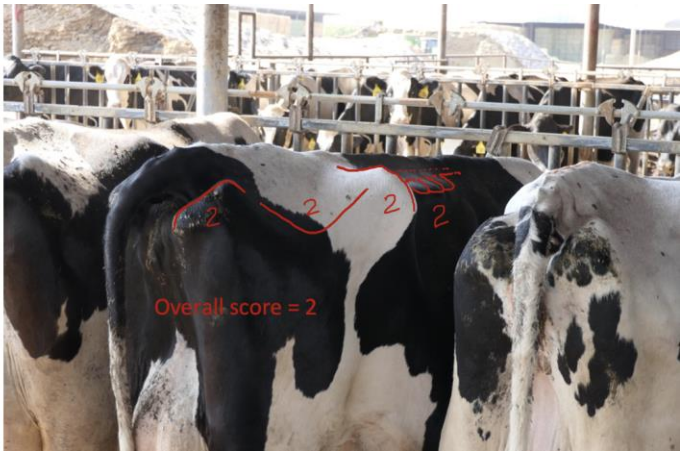
SCORE 3: Poor Area of mud or manure greater than 11" or 28 cm (adults, springers) or 5.5" or 14 cm (milk-fed calves, weaned heifers) in diameter in 2 of 2 scored areas on the same side. In some pens it may not be possible to score animals effectively as individuals. In those cases, record an estimate of the number of cattle that score a 3.

Body Condition Score

General BCS guidelines: Score each of the 4 body regions (short ribs, hooks, pins, thurl) separately. The lowest score obtained across all 4 regions is the overall BCS the animal will be scored as. Scorecards illustrating how to score each body region, including specific additional instruction on how to score short ribs, will follow.

For example, if a cow's short ribs are visible at the tip (score 1), she has angular hooks and pins (both score 2), and has a moderate depression between the hooks and pins (score 2), she will be scored as a 1 overall. Thin and emaciated cows and calves may also have prominent spines and ribcages, but these are not officially counted towards their overall score. Both can be variable, indicative of age or timing of last milk feeding, and the ribcage is often not visible when lactating cows and heifers are being scored.

Example 1

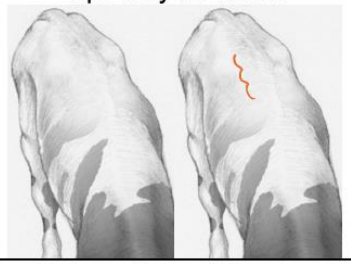
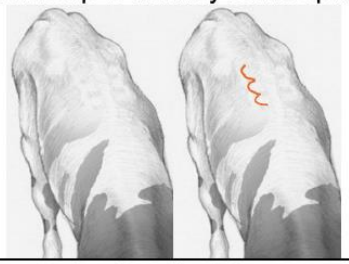
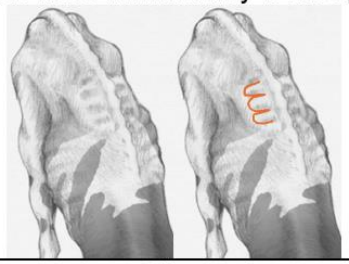
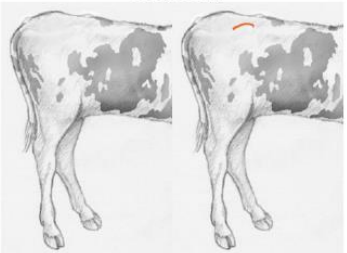
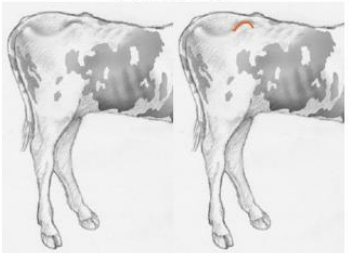
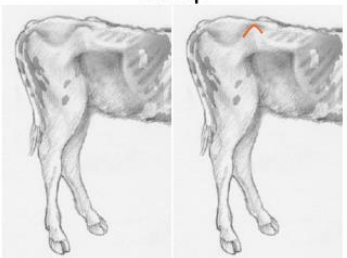
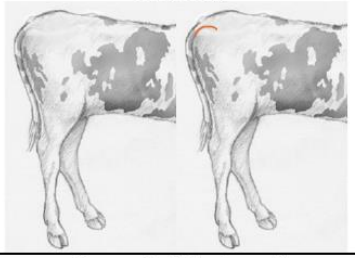
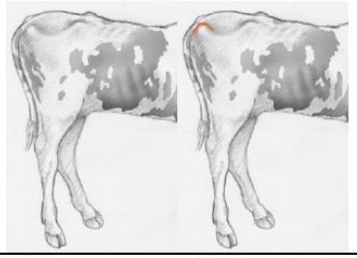
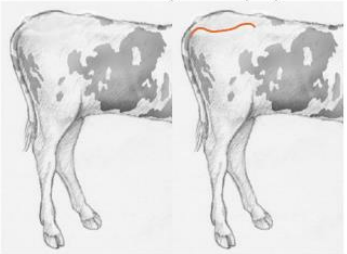
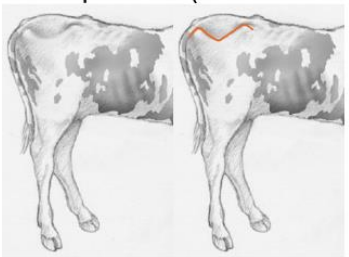
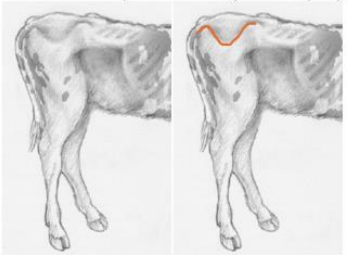


Example 2

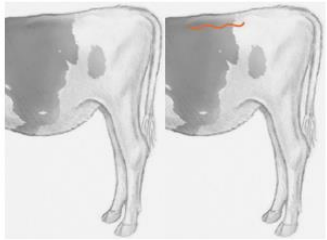
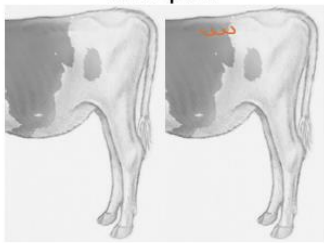
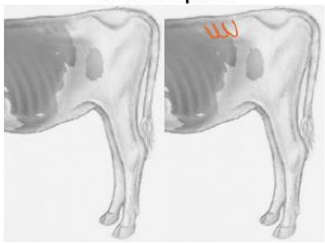
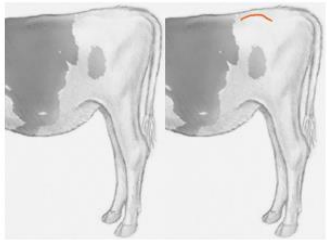
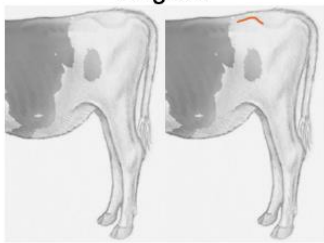
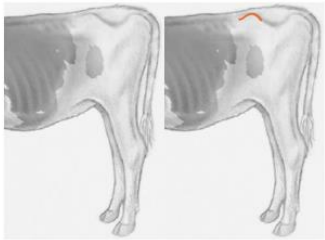
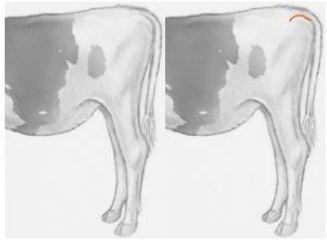
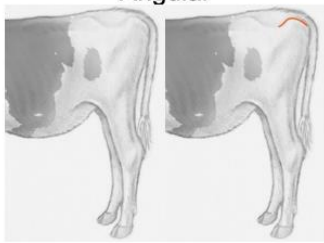
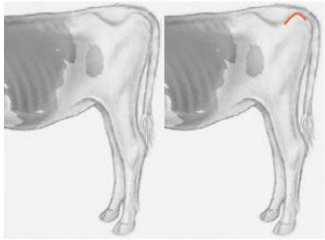
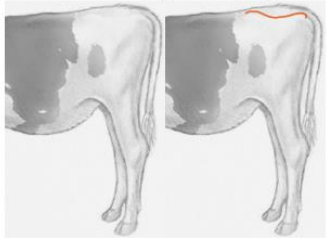
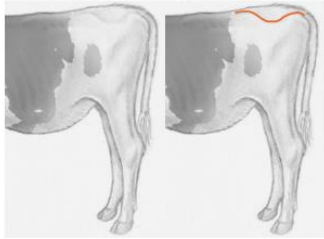
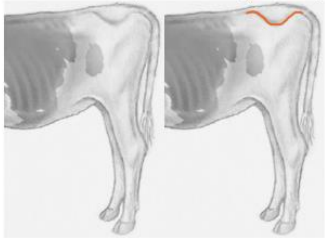
Additional instruction: Scoring short ribs

Visualize 3 lines: the first is at the base of the spine, as it slopes down and becomes level with the top of where the short ribs are (A). The second is at the tip of the short ribs (C), and the third is an imaginary halfway line between these two points (B). If only the tips of the short ribs are visible, this would be a score 1 for that region. If the short ribs are visible up to that imaginary middle line, that would be a score 2. If the short ribs are visible past that imaginary middle line, that would be a score 3

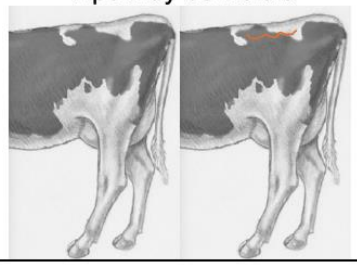
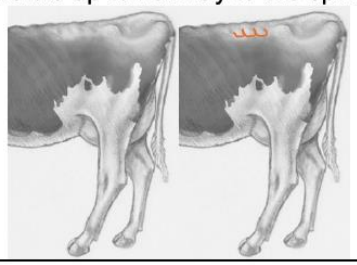
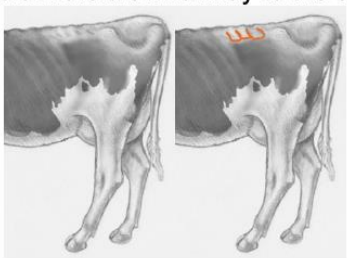
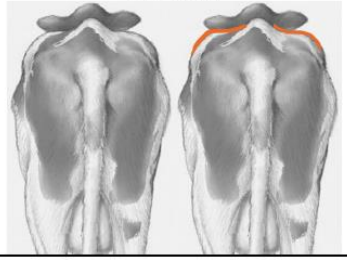
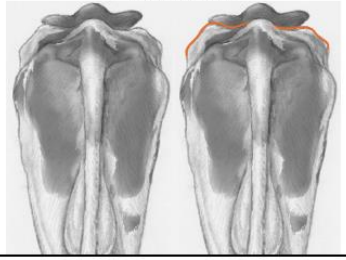
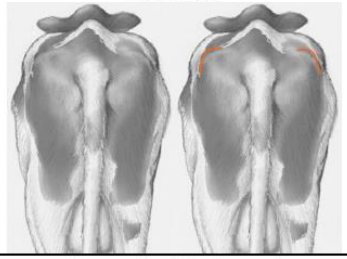
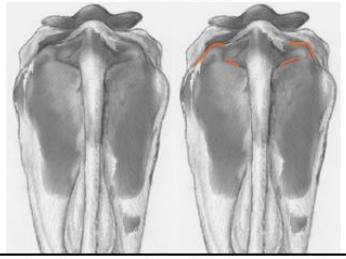
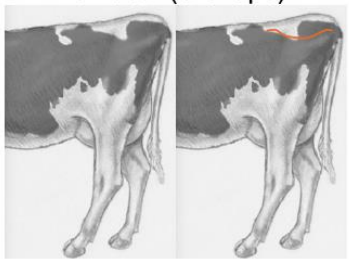
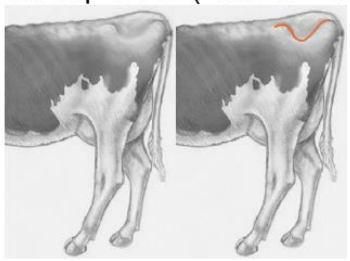
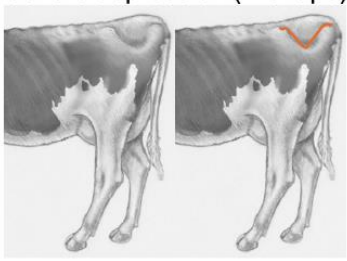
FOR TEACHING PURPOSES ONLY

Milk-fed Calves and Weaned Heifers – Body Condition Score Description			
Body region	**Score 1 (Good Condition)**	**Score 2 (Poor Condition)**	**Score 3 (Emaciated)**
Short ribs	Tips may be visible 	Visible up to halfway to the spine 	Visible more than halfway to the spine 
Hooks	Smooth 	Prominent 	Sharp 
Pins	Smooth 	Prominent 	Sharp 
Thurl: Area between the hooks and pins	Smooth (U-shape) 	Moderate depression (flattened V-shape) 	Severe depression (V-shape) 

FOR TEACHING PURPOSES ONLY

Springers – Body Condition Score Description			
Body region	**Score 1 (Good Condition)**	**Score 2 (Moderate Condition)**	**Score 3 (Poor Condition)**
Short ribs	Tips may be visible 	Visible less than a quarter of the way to the spine 	Visible more than a quarter of the way to the spine 
Hooks	Smooth 	Angular 	Prominent 
Pins	Smooth 	Angular 	Prominent 
Thurl: Area between the hooks and pins	Smooth (U-shape) 	Moderate depression (flattened V-shape) 	Prominent depression (V-shape) 

FOR TEACHING PURPOSES ONLY

Lactating Cows – Body Condition Score Description			
Body region	**Score 1 (Good Condition)**	**Score 2 (Poor Condition)**	**Score 3 (Emaciated)**
Short ribs	Tips may be visible 	Visible up to halfway to the spine 	Visible more than halfway to the spine 
Hooks	Smooth 	Prominent 	Sharp 
Pins	Smooth 	Prominent 	Sharp 
Thurl: Area between the hooks and pins	Smooth (U-shape) 	Moderate depression (flattened V-shape) 	Severe depression (V-shape) 

FOR TEACHING PURPOSES ONLY

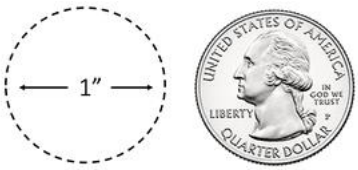
Using the sample guidelines, score lactating cows. Count only the WORST hock of every cow in the group.

Tarsus – "HOCK" Scoring

Score 1	Score 2	Score 3
Normal: complete hair loss is *less* than 1" or 2.5 cm in length or width	***Moderate:*** complete hair loss is *greater* than or equal to 1" or 2.5 cm in length or width, a dried scab, and/or moderate swelling *less* than or equal to 1" or 2.5 cm in height	***Severe:*** swelling greater than 1" or 2.5 cm in height, and/or an open or bleeding wound
		
Score 1	**Score 2**	**Score 3**

Notes

- Evaluate both the inside and outside of each hock, if visible
- If both left and right legs are visible, score the worst side
- Area of hair loss must be completely bald, no hair inside
- If there are several areas of hair loss on a hock, apply the size rules to each area, do not sum them
- Size of hair loss can be evaluated by length or width; it does not need be round
- Score size of swelling by looking at deviation from the line of the leg, either from the side or from behind



It is useful to create a reference for the measurements listed in the scores below (1" or 2.5cm), such as a quarter.

FOR TEACHING PURPOSES ONLY

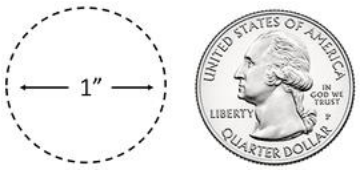
Using the sample guidelines, score lactating cows. Count only the WORST knee of every cow in the group.

Carpus – "Knee" Scoring

Score 1	Score 2	Score 3
Normal: complete hair loss is *less* than 1" or 2.5 cm in length or width	***Moderate:*** complete hair loss is *greater* than or equal to 1" or 2.5 cm in length or width, a dried scab, and/or moderate swelling *less* than or equal to 1" or 2.5 cm in height	***Severe:*** swelling greater than 1" or 2.5 cm in height, and/or an open or bleeding wound
		
Score 1	**Score 2**	**Score 3**

Notes

- If both sides are visible, score the worst side
- Area of hair loss must be completely bald, no hair inside
- Size of hair loss can be evaluated by length or width; it does not need be round
- Score size of swelling by looking at deviation from the line of the leg, either from the side or from head on
- If front of knee is not visible, score only 1 or 3, based on what can be seen and make a note



It is useful to create a reference for the measurements listed in the scores below (1" or 2.5cm), such as a quarter.

FOR TEACHING PURPOSES ONLY

Score every cow in the highest producing, oldest (multiparous) lactating pen while exiting from the parlor. If there is only one group of cows score the entire group. If cows are not grouped by age and days in milk, score the highest producing pen. Cows kept in tie stall barns and not normally released after milking will be scored standing in the tie stalls recognizing that only cows with a score of 3 can accurately be identified.

Locomotion Scoring Score Description	
SCORE 1: Normal Walks without obvious gait asymmetry or weight transfer between limbs and cannot discern which leg is lame after a few strides. Steps may be slightly uneven and may have a flat or subtle arch to the back.	 **Score 1: Normal**
SCORE 2: Moderate Lameness Asymmetric gait with obvious weight transfer and shortening of the stride of the affected limb altering cadence of movement. May also show a head bob, back arch and joint stiffness leading to abduction of the limb.	 **Score 2: Moderate**
SCORE 3: Severe Lameness Able to walk only with extreme difficulty, almost unable to bear weight on the affected limb, may not keep up with normal cows in the herd. May have a pronounced back arch with rear limb lameness.	 **Score 3: Severe**

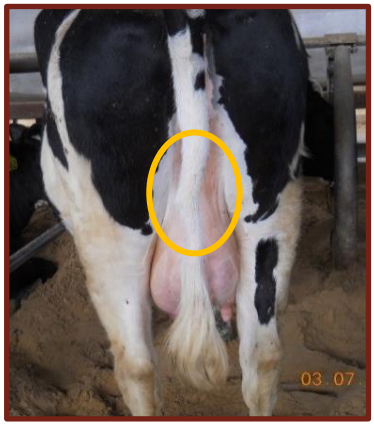
Injured Tails Score Description

Tails are score 1 (not injured) or 3 (injured)

Examples of Recently Injured Tails

Tails that have been recently injured will be swollen, may have abrasions and or crusted blood around the injured vertebrae, or the tip of the tail may have necrosed and fallen off. Breaks may be present near the base of the tail due to extreme force when applying a tail jack for restraint. Breaks that appear mid length or near the tip and are often the result of bending the tail over pipes or other structures in an attempt to restrain the cow.

Examples of Healed, Injured Tails



Tails injured and healed will often present with permanent crooks or bends in the tail.

Other Injuries

SCORE 3: Any open wound and/or swelling >1” in height

Water Trough Score Card 36 font

Hold 6-10” or 15-25 cm below the water surface 28 font

If you can read easily all these directions 24 font

The trough cleanliness is acceptable 18 font

In large troughs select 3 separate/distinct areas to check. If all 3 are readable it is acceptable.

C. PROTOCOLS & PAPERWORK

Example Documentation and SOP Requirement Checklist

All paperwork must be reviewed by the VOR **elements highlighted by an asterisk may be referenced within a separate SOP. ≠ If a farm does not vaccinate, do painful procedures, flame udders or need parasite prevention mark the item N/A.*

Forms/SOP	Required Element	Adeq.	Acc.	Comment
Cow Care Agreement	Defines and states that abuse and neglect are not tolerated	☐	☐	
	Employees must report problems	☐	☐	
Health Records	ID	☐	☐	
	Drug	☐	☐	
	Indication*	☐	☐	
	Route*	☐	☐	
	Dose*	☐	☐	
	With-hold*	☐	☐	
	Date	☐	☐	
	Person	☐	☐	
VCPR Form	Signed within last 12 months	☐	☐	
Caregiver Training≠	Stockmanship	☐	☐	
	Down Cows - Every caregiver trained to appropriate level	☐	☐	
	Euthanasia - Every caregiver trained to appropriate level	☐	☐	
	Calf Handling	☐	☐	
	Cow Care Agreement signed – all caregivers	☐	☐	
	Cow Care Agreement signed – service providers	☐	☐	
	Trained prior to working independently	☐	☐	
	Annual refresh and refresh as needed if not compliant	☐	☐	
Disbudding & Other Painful Procedures≠	Age (<8 weeks)	☐	☐	
	Method (Paste or hot iron/cautery)	☐	☐	
	Pain Mitigation: Local	☐	☐	
	Pain Mitigation: NSAID or Aspirin	☐	☐	
Maternity Pen/Calf Care	*Emergency Contact – may refer to other SOP	☐	☐	
	Monitoring Schedule	☐	☐	
	Colostrum – by 6 hrs	☐	☐	
	Forage by day 1	☐	☐	
	Starter by day 3	☐	☐	
	Calves must be dry, fed and able to stand on all 4 prior to transport	☐	☐	
	Calves moved by lifting, walking or crate/wheeled, no dragging, tails or ears	☐	☐	
Fitness for Transport	**Specify Conditions Not Fit:** cancer eye, fever, down, severe lame, prolapse, calving, udder cond., wounds/bleeding, neuro, emaciated	☐	☐	
	Special Considerations – Newborn calves must be dry, fed & able to stand on all 4, transport vehicle must be bedded	☐	☐	
	Check records for residue	☐	☐	

Forms/SOP	Required Element	Adeq.	Acc.	Comment
Non-Ambulatory Cows	Acceptable method – sled, stone boat, loader	☐	☐	
	No strike/hit/kick/beat	☐	☐	
	No dragging the cow (sled or mat ok)	☐	☐	
	Move ambulatory cows out/Down cows are isolated	☐	☐	
	Provide prompt care/Euthanize if catastrophic or moribund	☐	☐	
	Care – feed, water (hydrated), bedding, shade, treatment	☐	☐	
Humane Euthanasia	**Method** – gun, captive bolt or barbiturate OD by DVM (primary and secondary if different) including 2nd shot	☐	☐	
	No poll shots	☐	☐	
	Confirmation of death – if not unconscious/signs of life repeat	☐	☐	
	Method of carcass disposal	☐	☐	

Employee Training Documentation Example:

Dairy:

Cattle Care Agreement

Our success is dependent on the health and welfare of cattle.

As owners of dairy, the contract we have with our cattle requires that at all times all cattle are treated humanely with patience, dignity and respect. We make every effort to avoid undue pain and suffering and we do not and will not tolerate neglect or willful abuse of any animal on our farm. *We expect that all employee caregivers will adhere to our cattle handling farm policies and procedures. This includes proper treatment of cattle as well as providing adequate food, water and shelter in addition to reporting immediately any observed act of neglect or willful abuse to a supervisor.*

Prior to working with our cattle employee caregivers will be trained on proper stockmanship, the low stress animal handling skills for working with cattle on a day to day basis. Low stress handling will be used so that cattle are moved in a way that minimizes stress and injury. *Excessive force with any stick or other object will not be used when handling cattle. Electric prods may never be used on calves and may only be used on adult cattle in a single event when other efforts have failed. Willful abuse includes but is not limited to kicking, hitting, or beating cattle, poking with sharp objects, repeated use of an electric prod or using a prod in the face or other sensitive areas and is unacceptable on our farm.*

All live calves will be handled and moved gently. *Calves will not be moved by dragging. Ears and tails are not handling to move, lift or restrain calves. Willful abuse of calves includes, but is not limited to, kicking, hitting, beating, dragging or dropping calves and is unacceptable on our dairy.*

Cattle that are seriously injured, with little or no chance of recovery, obviously suffering, and/or not fit for market, will be euthanized in a timely manner. Euthanasia will be conducted using methods documented in the farm specific SOP. Down cattle will be evaluated as soon as possible to determine if they are likely to recover and will be re-evaluated at least every 12 hours. Down cattle must have access to feed, water, and shelter. Posted protocols for movement and care of down and/or injured cattle will always be followed.

The welfare and care of the dairy's animal population is every caregivers shared responsibility. Open discussion of the dairy's stated welfare expectations and our results is invited and encouraged.

- ✓ As a caregiver on this dairy farm, I recognize the importance of animal welfare and agree that I have a responsibility to care for animals in accordance with the farm's stated policies.
- ✓ I have read this cattle care agreement and I am committed to providing optimal care and respect for all animals
- ✓ I understand that it is my obligation to immediately report any situation where it appears that animals are being mistreated and that I will not be retaliated against by management or other employees.
- ✓ I understand that I may be dismissed immediately if I fail to report any situation where it appears that animals are being mistreated.

_____Employee/Date _____Supervisor/Date

FOR TEACHING PURPOSES ONLY

Veterinarian Client Patient Relationship Form Example

Veterinarian Client Patient Relationship (VCPR) Agreement

A Valid VCPR requires the following:

- ✓ The farm owner consents to entering into this VCPR
- ✓ The Veterinarian of Record (VOR) has sufficient knowledge of the farm and animals
- ✓ The VOR takes responsibility for making medical judgments regarding the health and welfare of cattle on the farm
- ✓ The farm owner and farm management/workers each agree to follow the VOR's instructions
- ✓ The VOR is available for follow up and agrees on a schedule for timely visits
- ✓ *If farm owners, managers or workers use or administer drugs contrary to the VOR's instructions, it is a violation of the VCPR, making this agreement null and void.*

Farm Information

Owner Name: _____ Date: _____

Mailing Address: _____ City: _____ State: _____

Farm Name: _____

Farm Address (if different from above): _____

Primary Phone: Fax: Email:

Animal Groups covered in this VCPR:					
Lactating cows	☐	Breeding Age Heifers	☐	Dry Cows	☐
Weaned calves	☐	Milk fed calves	☐		

Veterinarian of Record Information: *The veterinarian of record takes responsibility for making medical judgments on the farm regarding the health and welfare of animals and is the responsible party for providing appropriate oversight of drug use on the farm. Such oversight is critical in establishing and maintaining a VCPR. This oversight should include establishment of treatment protocols, training of personnel, review of treatment records, monitoring use of all drugs regardless of where or from whom the drugs are distributed.*

Name: _____ Clinic Name: _____

Mailing Address: _____ City: _____ State: _____

Primary Phone: _____ Email: _____

State Licensed in _____ Other: _____

Before signing this agreement, the following must be completed:

- ☐ VOR documents and reviews annually an Approved Drug List, noting condition to be treated, proper dose, route and withdrawal times
- ☐ Farm management develops and commit to maintaining a Treatment Record System (written or computer based)
- ☐ VOR reviews SOPs and treatment protocols (original documents must be signed by VOR, annual SOP review check list can be signed for SOPs that have not changed)

I hereby certify that a valid VCPR is established for the above listed farm and veterinarian and will remain in force until canceled by either party, or 1 year from the signature date below.

Farmer/Owner Signature: _____ **Date:** _____

Veterinarian of Record Signature: **Date:**

FOR TEACHING PURPOSES ONLY

Health Record Example

Daily Treatment Record

Developed by the American Association of Bovine Practitioners

Farm Name _____

Veterinarian _____

Veterinarian Phone number _____

Cow ID	Time of Treatment		Pen	Condition Treated	Treatment Plan					Withdrawal Time		Calculated Withdrawal Period Expires		Actual Date and Time in Tank	Remarks/Cautionary Satements *Example: Initials of person treating or testing*
	Date	Time			Treatment	Dosage	Route of Admin.	Frequency of Treatment	Length of Treatment	Milk (hrs)	Meat (days)	Milk	Meat		
Sample															
1234	*4/15/20*	*8:00 AM*	*1*	*Mild Mastitis*	*Oxytocin*	*2cc*	*IM*	*every milking*	*4 Milkings*	*0 hrs*	*0 days*				
4321	*4/1/20*	*11:00 AM*	*3*	*Mastitis w/ Hard Quarter*	*Pirsue*	*1 tube/ quarter*	*IMM*	*every 24 hrs*	*2 days*	*36 hrs*	*9 days*	*4/3/20 PM*	*4/10/20*	*AM on 4/5/20*	
1428	*4/1/20*	*1:45 PM*	*4*	*Dry treat*	*Tomorrow*	*1 tube/ quarter*	*IMM*	*once at dry off*	*Once*	*72 hrs*	*42 days*	*4/4/20 PM*	*5/16/20*	*AM on 5/17/20*	

Visit **www.nationaldairyfarm.com** for a customizable version of this form.

Standard Operating Procedures Examples:

Non-Ambulatory Animal SOP

Work with your veterinarian to develop a procedure consistent with AABP guidelines for identifying, transporting, and managing non-ambulatory animals.

Review the plan annually with your veterinarian and the employee(s) responsible for dealing with non-ambulatory animals.

Objectives: (1) To safely and humanely move and handle non-ambulatory cattle (2) To increase the chances of recovery of a non-ambulatory animal (3)To minimize the pain and suffering of non-ambulatory cattle

Definition: Any animal (including calves) that cannot stand or walk is to be considered non-ambulatory. If the animal will not rise, or is unable to rise due to a slippery surface, it is considered non-ambulatory.

Farm: _____

Down Cow Team - Individuals responsible for non-ambulatory cattle:

1. _____

2. _____

3. _____

Standards of Care:

- All employees not affiliated with the Down Cow Team will be made to leave the immediate area.
- Members of the Down Cow Team will not verbally insult or swear at the cow.
- Members of the Down Cow Team *will not strike the down cow with any object.*
- Members of the Down Cow Team *will not drag the down cow by the head or any limb with heavy equipment* except in extreme circumstances when the animal is physically trapped and with the consent of the owner or manager.
- Members of the Down Cow Team will treat the cow with dignity and respect at all times.
- Members of the Down Cow Team will acknowledge that the reason for this team is to safely and humanely move the down cow to an area where she can be given the proper care to facilitate her return to production.

Handling and Movement: *Cows will be moved in accordance with AABP guidelines*

- When a non-ambulatory animal is identified, the above listed individuals are notified.
- *All ambulatory animals are removed from the immediate area.*
- *Non-ambulatory animals that are severely suffering or deemed unsalvageable are to be euthanized immediately.*
- Once identified, non-ambulatory animals will be moved to a well bedded pen within hour(s) (suggested 2 hours or less).
- Before movement the animal will be restrained to prevent injury to itself and employees. A halter will be placed on the head which will be tied to the rear leg. The front legs should be tied together and rear legs should be tied together to prevent kicking.
- If necessary, and safe for the animal, chemical sedation/restraint can be administered. This may be done by your veterinarian of record.

Veterinarian of Record Signature: _____ Date: _____

Adapted from: Animart Down Cow Example SOP
Praedium Non-ambulatory Care Standard Operating Procedure

Method for Moving Non-Ambulatory Animals: (Check all boxes that apply)

- ☐ The farm will utilize a sled for animal movement.
  1. Position the sled as close as possible behind the animal and in a way that the animal will travel headfirst, if possible.
  2. Roll the animal on its side, onto the sled.
  3. Heavy equipment will be used to pull the sled at a speed no faster than a walking pace. At least one person should walk with the sled to ensure the animal stays in place.
  4. Once at the desired location, the animal will be rolled upright and off of the sled.
  5. The restraints will be removed from the animal's front and rear legs and the halter will be removed.

- ☐ The farm will utilize a loader large enough such that the entire body rests within the bucket for animal movement.
  1. Position a loader bucket at least 6 feet long behind the restrained animal. Ensure that the bucket is flush with the ground and that the inside of the bucket is cushioned with bedding or rubber mats.
  2. Manually roll the cow into the bucket, do not use the machinery to scoop the animal.
  3. Rotate the bucket slowly so that the animal is not at risk of falling out and raise the bucket 2 feet off the ground. Ensure that none of the animal's limbs are touching the ground.
  4. Travel with the animal in the bucket at a speed no faster than a walking pace. Again ensure that no body parts are dragging on the ground.
  5. Once at the desired location, slowly lower the bucket to the ground and rotate so that it is flush. Ensure that no body parts are trapped between the bucket and the ground.
  6. Manually roll the animal out of the bucket and onto her belly. Do not use the bucket to dump the animal.
  7. The restraints will be removed from the animal's front and rear legs and the halter will be removed.

Care & Treatment:

- will be responsible for daily care of non-ambulatory animals.
- All non-ambulatory animals will be rolled from side to side every hours (recommended 2-3 hours), *will be offered fresh feed times a day, and will be offered fresh water throughout the day.*
- *The pen or area the animal is in will be bedded frequently to ensure cleanliness and comfort.*
- *If the animal is outdoors it will be provided shade from the sun and shelter from inclement weather.*
- Animals will be evaluated by the veterinarian or manager daily.
  1. Animals that are severely suffering or that have irreversible damage shall be euthanized promptly.
  2. *Animals that are treatable will be treated according to farm protocols.*
  3. If the area where the non-ambulatory animal is being kept is not able to be kept in a dry and comfortable condition to encourage recovery, the animal will be humanely euthanized.
- Non-ambulatory animals can be assisted to stand with the help of an appropriate sling that supports the weight of the animal over a broad area of its belly and chest. Additionally, a cow float can be used to raise an animal providing that the cow is strong enough to stand in the water. Hip lifts, if used, must be used with care. Hip lifts may be used only to help a cow into a standing position and should never be used to move cows over a distance or suspend them off the ground.
- Employee(s) working with a non-ambulatory animal will notify a manager or veterinarian if the animal's condition worsens or if the animal has been down for 2 days. The manager or veterinarian will make a decision whether euthanasia or additional treatments are necessary.

Humane Euthanasia SOP

Work with your veterinarian to develop a euthanasia action plan for each stage of production on your farm that is *consistent with AVMA and AABP guidelines on humane euthanasia.*

This plan should be kept in an obvious location in the barn. Review the plan annually with your veterinarian, existing staff, and any new employees when hired.

Objective: To minimize pain and suffering by providing a humane and timely death to animals on the farm when necessary

FARM:				
Phase of Production	*Euthanasia Method*	Alternative Method	Responsible person(s)	Req. Equipment*
Mark the appropriate box (select all that may apply) and fill in the name of the trained individual responsible				
Calves	Gun-shot (GS)	☐Captive Bolt Gun (CBG) ☐Veterinarian	GS - CBG – DVM -	✓ Halter ✓ Safety Glasses ✓ Ear Plugs
Heifers and Steers	Gun-shot (GS)	☐Captive Bolt Gun (CBG) ☐Veterinarian	GS - CBG – DVM -	✓ Halter ✓ Safety Glasses ✓ Ear Plugs
Mature Cows	Gun-shot (GS)	☐Captive Bolt Gun (CBG) ☐Veterinarian	GS - CBG – DVM-	✓ Halter ✓ Safety Glasses ✓ Ear Plugs
Bulls	Gun-shot (GS)	☐Captive Bolt Gun (CBG) ☐Veterinarian	GS - CBG – DVM-	✓ Halter ✓ Safety Glasses ✓ Ear Plugs

* Required equipment includes use of either fire-arm or captive bolt gun

Required Skills:

- ✓ Specific Training by herd veterinarian or Dairy Manager in use and care of equipment
- ✓ Proper animal handling & Ability to correctly apply halter and proper restraint

Important Telephone Numbers:

1. Veterinarian (DVM): _____

DVM Phone # _____

After hours emergency # _____

2. Deadstock Removal (consistent with local regulations): _____

Phone # _____

Adapted from: NYSCHAP
Gerrit Rietveld - Animal Care Specialist/OMAF
Iowa State University Extension- Procedures for Humane Euthanasia

Veterinarian of Record Signature _____ Date: _____

Danone North America or its affiliates are not responsible for any property damage, injury or death which results from the use of the Captive Bolt Gun or any other equipment used in this Euthanasia Action Plan.

- **The captive bolt or gunshot should penetrate the skull at the intersection of lines extending from the lower base of each side of the horn bed to the outside corner of the opposite eye as shown in Figure 1.**

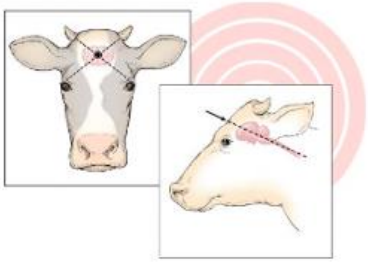


Figure 1. Target site and penetration angle for euthanasia of cattle (from http://vetmed.iastate.edu/HumaneEuthanasia)

Euthanasia

1. Once an animal has been identified for euthanasia, _____ (person responsible for performing euthanasia) will be notified.
2. Apply a halter and secure head restraint to prevent movement of the cow or calf.
3. Choose the appropriate method of euthanasia for the animal according to age and size. A .22 caliber hollow or soft point bullet may be used on young animals. Adult animals require a .22 magnum or larger caliber firearm with a solid point bullet. Alternately, 12, 16, or 20 gauge shotguns loaded with slugs or 2, 4, or 6 birdshot can be used.
4. Ensure all personnel and other animals are out of trajectory areas behind and beside the animal.
5. Aim for the area identified by the "**X**" in Figure 1.
   a. Hold a rifle within 2-3 feet of the target and a shotgun within 1-2 yards of the target animal. **Never place the muzzle of the firearm directly on the skull**. Pull the trigger.
   b. Hold a captive bolt gun directly against the skull of the animal and pull the trigger. Follow up with a secondary step (injection of KCl, pithing or second shot).
6. Confirm death and repeat the procedure if the cow is not immediately rendered unconscious or if death is not confirmed within 5 minutes.

Confirmation of Death

- It is essential that you confirm the animal's death directly following euthanasia.
- A standing animal should immediately collapse. Its muscles may involuntarily contract, usually for no longer than 20 seconds. After this, it may show some poorly coordinated kicking or paddling movements before the muscles completely relax.
- Check the animal for breathing, heartbeat and blinking response (corneal reflex). There should be none. The eyes should be fixed and dilated. To check the blinking response, touch the surface of the animal's eye (the cornea). Any eye movement or blinking shows sustained or recovering brain activity.
- *If there is any sign of breathing, heartbeat or blinking, repeat the euthanasia method.*

Veterinarian of Record Signature _____ Date: _____

Danone North America or its affiliates are not responsible for any property damage, injury or death which results from the use of the Captive Bolt Gun or any other equipment used in this Euthanasia Action Plan.

1 PAACO EXAMPLE SOP-Disbudding

Disbudding Protocol

Work with your veterinarian to develop a protocol that is appropriate and consistent with AABP guidelines for calves of different ages on your farm.
Review the plan with your veterinarian and the employees responsible for the procedures annually.

Objective: To disrupt the growth of horns using proper, humane handling while causing the least amount of stress and discomfort.
Principles: Calves will dehorned at an early age and be given medication &/or treatments to minimize the pain associated with the procedure regardless of the procedure used and age of the calf.

**The use of anti-inflammatories for pain mitigation associated with dehorning is considered extra label drug use. However, it is acceptable when done within the context of a VCPR with the veterinarian of record.*

FARM:				
Age of Cattle	Method	Pain Mitigation(s) Used*	Responsible Person(s)	Required Equipment
< 7days Goal: <48 hours	Disbudding with PASTE	☐ Anti-Inflammatory ☐ Local Anesthetic		
<8 weeks	Disbudding with Hot Iron or cautery	☐ Local Anesthetic ☐ Anti-Inflammatory		
>8 weeks should not be standard practice	Dehorning	☐ Local Anesthetic ☐ Anti-Inflammatory		

Disbudding:
a) Restraint -

b) Procedure -

Dehorning:
a) Restraint -

b) Procedure -

Veterinarian of Record Signature: _____ **Date:** _____

Fitness for Travel SOP

Work with your veterinarian to develop a standard operating procedure to determine an animal's ability to be transported.

Review this procedure annually with your veterinarian and the responsible employees.

Objectives: (1) To ensure the animal's welfare and a safe food supply by helping producers and employees determine whether or not an animal is suitable for transport. **(2)** Identify conditions that automatically disqualify an animal for transport.

Principles: It is not good for the welfare of the cow or the business of the farm to ship animals not fit for transport or the food supply.

Farm: _____

Herd Veterinarian: _____

- The following individual(s) will be responsible for determining an animal's fitness for transport:

  1. _____
  2. _____

Cattle NOT Fit for Transport:

- *The responsible individual(s) will evaluate the animal to verify that none of the following conditions are present:*
  1. *Advanced Cancer eye in either eye or complete blindness (blind in both eyes)*
  2. *Fever greater than 103°F*
  3. *Non-ambulatory/down animals*
  4. *Severe lameness (non-weight bearing, 3-legged lameness or obvious fracture or dislocation of leg or hip)*
  5. *Uterine prolapse*
  6. *Active calving or likely to calve during transport*
  7. *Distended or dropped udders that affect mobility*
  8. *Open wounds, active bleeding*
  9. *Central nervous system/neurologic symptoms*
  10. *Emaciated (saw toothed spine and all ribs easily seen)*

If any of the above conditions are present the animal will not be transported and will either be treated appropriately or euthanized according to farm protocols.

Veterinarian of Record Signature: _____

Date: _____

Adapted from: AABP Transportation Recommendations for Cattle
Practical Guidelines to Assess Fitness for Transport of Adult Bovines-FASFC

Cattle that require Special Consideration

- Conditions that may disqualify an animal for transport and require thorough assessment include, but are not limited to:
    1. *NEWBORN CAVES – Newborn calves may not be transported until have been fed, are dry and able to stand squarely on all four feet.*
    2. Surgical wounds
    3. Skin problems
    4. Abnormal discharge
    5. Abnormal swelling
    6. Difficulty breathing
    7. Diarrhea
    8. Dangerous/fractious animals

- Animals with any of the above conditions must be evaluated thoroughly to ensure that the animal will not suffer unnecessarily, become injured, or present a threat to other animals or humans during transport.

✓ *Once an animal has been cleared physically for transport the medical records will be checked to ensure that no milk or meat withholds are present. If a withhold is found or suspected the animal is not to be transported.*

✓ **Once cleared for transport the animal will be given food and water up until the time it leaves the premises. Additionally, lactating cows will be milked within 2 hours of leaving the premises.**

✓ The loading areas and ramps, including the slope of the ramp, should be designed to minimize stress and injuries for the animals and ensure the safety of the animal handlers.

Calf Care-Maternity Pen Management SOP

Work with your veterinarian to provide protocols for maternity management and to reduce the prevalence of still births, neonatal disease and metritis.

Review the plan annually with your veterinarian and the employees responsible for maternity management.

Objectives: (1) To ensure calf survival and cow health by providing proper assistance during calving in a timely manner (2) To promote the welfare of all calves by feeding colostrum in a timely manner

Principles: All calves, regardless of sex, will be provided proper care including adequate colostrum and feed to promote good health and welfare

Farm:			
Veterinarian:			
Person to call if additional assistance is needed:			
After Hours Emergency Contact:			
Signs of Calving: Maternity Management Team members will be instructed on the signs of calving and how to respond, either by assisting with the calving themselves or by contacting the appropriate person. * Signs of active labor			
1.	Tail is sunken/Relaxation of ligaments	**6.**	Abdominal Pushing*
2.	"Strutting of teats" – Tight bag, full udder	**7.**	Cow is uncomfortable/gets up and down
3.	Solitude – cow is off by herself	**8.**	Water bag is showing*
4.	Mucus plug passed	**9.**	Water bag has broke*
5.	Vulva is loose and swollen +/-discharge	**10.**	Feet and/or nose showing from vulva*

- ✓ After rupture of the water bag, heifers should calve in 1 to 4 hours and cows in ½ to 2 hours.
- ✓ For safety of the cow and calf, it is best to call the veterinarian if a heifer goes past 2 hours and cows past 1 hour and assistance on the farm has failed.

Maternity Management Team			
1.		Shift:	
2.		Shift:	
3.		Shift:	
Each member of the team will be provided training on how to monitor, respond and assist with calving prior to working without direct supervision.			

Close-Up & Maternity Pen Management Procedures	
1.	*Close-Up and maternity pens are maintained so that they are clean, dry and well bedded.*
2.	Each pen will be checked twice daily for proper feed and clean water.
3.	*Close-Up cow pen is monitored throughout the day*, every hours at a minimum. Once a cow is in active labor she is moved to a clean maternity pen if used/available.
4.	Once water bag appears/active labor moved to the maternity pen the cow/heifer will be checked every 1-2 hours
5.	Calf delivery protocols include proper sanitation of the cow and equipment prior to assisting. Employees will be trained on identifying when the veterinarian should be called for assistance.
6.	Monitor the expulsion of fetal membranes and their removal from the area.
7.	All calving related events will be recording in the calf health record book

Veterinarian of Record Signature: _____ Date: _____

New Born Calf Team				
1.			Shift:	
2.			Shift:	
3.			Shift:	
Each member of the team will be provided training on how to care for newborn calves, including feeding, handling and transporting.				

Newborn Calf Management Procedures	
1.	If calf does not breathe readily, rub the calf with dry towel to stimulate breathing, wipe nose and mouth clean.
2.	Treat/dip the umbilical cord with iodine.
3.	*Calves of both sexes will be fed qts. of quality colostrum within hours of birth.* Best practice is to feed colostrum within 1-4 hours. No calf should exceed 6 hours without colostrum.
4.	All heifers and bull calves will be identified with an ear tag or ear clip.
5.	All data will be recorded in the calf health record book, including any health products that may have been administered according to farm and/or veterinarian protocols.
6.	**Moving Calves:** • Calves will be moved to a clean, warm, dry, and heavily bedded calf specific area. If the temperature is below 60 F°, an external heat source or jacket will be provided. • If the calf can walk, it will be moved to its pen using gentle pressure on its rump while guiding the calf by its head with one hand under its jaw. • A calf will never be moved by the pulling on tail or by the ear, or by dragging. • If not walking easily, the calf will be moved by carrying it with both hands, supporting the calf with both arms around the chest and rump or by placing it gently in a clean calf transport vehicle (sled, wheel barrow or cart) to its home pen.
7.	All calving related events will be recording in the calf health record book
8.	**CALF TRANSPORT:** If transported to an offsite location, calves will not be transported until they are DRY, able to stand squarely on all four feet and fed.

Once calves are moved to their home pen they will be provided with water and forage and offered starter grain/pellets starting at day 3.

D. Audit Planning Tools

Example Audit Prep Sheet

A. Farm Information: Please also provide a map of the FARM

Farm:		Farm Owner:			
		Farm Manager:			
Address:					
City:		State:		Zip:	
Phone:		Email:			
Name of Milk Co-Op Member Group:					
Veterinarian of Record (VOR):		VOR Phone:			
		VOR email:			

# of Lactating Cows:		Milking Parlor Type:	
Lactating Cow Housing Type:		# of Lact. Cow Pens or groups:	
Are there specific pens that are locked every day?			
If yes which ones at what time?			
Which Pen # (group) represents the OLDEST, HIGH producing cows?			
What time is that pen milked? (If <100 Cows total, when does milking start?)			
What pen and what time is the pen before & after the old-high cow pen milked?			
How long does it take to milk the Old/High string OR all cows if <100 cows?			
Are there bulls in any pens?		If yes which pens?	

# of Heifers (on and off the farm):				# of Dry Cows:	
Heifer Housing Type:		# of Heifer Pens:		Dry Housing Type:	
# Recently Weaned Heifers on site		# of Springers on Site		# of Dry Cow Pens:	
Are any cattle raised off site?	YES / NO	If yes, how many Miles away?			

# of Calves on milk:		Age at weaning?		Calves Raised off site?	YES / NO
Milk Fed Calf Housing Type:		What time are calves fed?			

Is it OK to Take Pictures?	Yes ☐	No ☐

FOR TEACHING PURPOSES ONLY

Farm Quality and Herd Health Summary Information needed for the audit					
Record Type	Written	☐	Computer	☐	Herd Computer Program type:
List of employees/farm hands?			Please provide a copy		
# of Family Employees:			# Non-family employees		
Written Protocols available?			Please provide a copy of any written protocols		
Herd Health Records:		%	Please Circle if answer is based on records or an estimate		
Lactating Cow Mortality rate:			Estimate / computer records		
% Cows culled within 60 DIM			Estimate / computer records		
% Cows culled annually			Estimate / computer records		
% of COW mortalities euthanized			Estimate / computer records		
Calf Mortality rate (not including DOAs)			Estimate / computer records		
% of CALF mortalities euthanized			Estimate / computer records		

Please Complete the following table:

Alternatively, you can provide a printout of: Pen/Pen count/Average DIM/Average Lact# and a list of milking times

Lactating Pens				
Pen (corral, group)	# of cattle	Average DIM	Average Lact #	Time brought to parlor

FOR TEACHING PURPOSES ONLY

PAACO Example Audit Summary

Reason for visit: Dairy Welfare Audit
Customer Representative:
Date:

Farm Owner/Name:
Address:
Producer #:

Achievements:
1.
2.
3.

Alarms:
☐ ☐ ☐
☐ ☐ ☐
☐ ☐ ☐

Next Steps: Your next full audit will be in _____ months

_____ will send you the summary and will reach out a few months before your next audit is due.

Performance Benchmarks

	Score 2 (%)	Score 3 (%)
Calves		
Body Condition		
Hygiene		
Weaned Heifers		
Body Condition		
Hygiene		
Springers		
Body Condition		
Hygiene		

	Score 2 (%)	Score 3 (%)
Lactating Cows		
Body Condition		
Hygiene		
Injured Tails		
Locomotion		
Hocks		
Knees		
Milk Quality		

FOR TEACHING PURPOSES ONLY

SECTION SUMMARY –

Office and Records: SOP Checklist for details

Training - Complete/Not Complete

Health Records - Complete/Not Complete

SOPs - Complete/Not Complete

General Care & Environment: All Pens – EVERY pen is evaluated using the "Everywhere & METAL" criteria:

- ✓ Movement
- ✓ Enrichment
- ✓ Thermal
- ✓ Access to water
- ✓ Lying Surface
- ✓ Abuse & Neglect
- ✓ Slips & Falls
- ✓ Immediate Care – severe injuries
- ✓ Emergency
- ✓ Handling
- ✓ Prohibited Practices

Animal Welfare:

Calves

☐ General Care & Environment

☐ Quality of Life Considerations (Feed Access, Social Housing, Nipple Fed, Forage)

Weaned Heifers

☐ General Care & Environment

☐ Quality of Life Considerations (Low Stress transition, enrichment)

Springer Heifers

☐ General Care & Environment

☐ Quality of Life Considerations (Low Stress transition, enrichment)

Lactating Cows

☐ General Care & Environment

☐ Quality of Life Considerations (Enrichment, Exercise, Time Budget)

Dry Cows

☐ General Care & Environment

☐ Quality of Life Considerations

Hospital/Sick Cows

☐ General Care & Environment

☐ Quality of Life Considerations (Dedicated pen, 100 SQF, 30"Bunk, Treated)

Sample Size Calculator for Prevalence Survey

$n = N*X / (X + N - 1)$

- N= population being sampled
- $X = (Z^2 \times p(1 - p))/e^2 = 384.16$

Z= 1.96; p=0.5 & e = 0.05

Sample Size calculator

Group Size (N)	Sample Size (n)	Group Size (N)	Sample Size (n)	Group Size (N)	Sample Size (n)	Group Size (N)	Sample Size (n)
<30	ALL	105	83	300	169	1,000	278
30	28	110	86	320	175	1,050	282
32	30	115	89	340	181	1,100	285
34	32	120	92	360	187	1,150	289
36	33	125	95	380	192	1,200	292
38	35	130	98	400	197	1,250	295
40	37	135	101	420	201	1,300	297
42	38	140	103	440	206	1,350	300
44	40	145	106	460	210	1,400	302
46	42	150	109	480	214	1,450	304
48	43	155	111	500	218	1,500	306
50	45	160	114	520	222	1,550	309
52	46	165	116	540	225	1,600	310
54	48	170	119	560	229	1,650	312
56	49	175	121	580	232	1,700	314
58	51	180	123	600	235	1,750	316
60	53	185	126	620	238	1,800	317
62	54	190	128	640	241	1,850	319
64	55	195	130	660	244	1,900	320
66	57	200	132	680	246	1,950	322
68	58	205	134	700	249	2,000	323
70	60	210	137	720	251	2,050	324
72	61	215	139	740	254	2,100	325
74	63	220	141	760	256	2,150	327
76	64	225	143	780	258	2,200	328
78	65	230	145	800	260	2,250	329
80	67	235	147	820	262	2,300	330
82	68	240	148	840	264	2,350	331
84	70	245	150	860	266	2,400	332
86	71	250	152	880	268	2,450	333
88	72	255	154	900	270	2,500	334
90	74	260	156	920	272		
92	75	265	158	940	273		
94	76	270	159	960	275		
96	77	275	161	980	277		
98	79	280	163				
100	80	285	164				
		290	166				
		295	168				

Examples:(1) If the oldest group of bred heifers is housed in a pen of 44, a minimum of 40 heifers in the pen should be scored. (2) If there are 560 milk-fed calves housed in individual hutches, a minimum of 229 should be scored randomly to obtain a representative sample across ALL ages represented in that life-stage group.