

Protocol compliance and training to prevent residues

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Abstract

Protocols and their compliance are imperative for the dairy industry for food safety, animal welfare and care, employee safety, antibiotic stewardship and for the financial success of the dairy. The veterinarian can help farmers have clear, simple protocols, help them to train people to the protocols, and help them to evaluate the success of the protocols with data and records. With regular review and training, we can prevent residues in food and have successful animal care and viable farms.

Key words: dairy, protocols, training, residue avoidance

Introduction

Protocols on the dairy farm and for veterinarians are important. We need to empower and help our dairy clients and their employees to have simple, easy to follow protocols for everything on the dairy from milking to feeding to breeding to drug treatments. Protocol compliance is important in every industry and in every business but for dairy farming, we need to remember that the importance and consistency is critical for safety of employees, family, cows and the consumers who purchase the food we produce.

Steps for ensuring protocol compliance

Protocol compliance can be described as the conformity in fulfilling a recognized or institutional requirement, guideline, recommendation, protocol or other standard.¹ How do we ensure that people can understand and follow protocols? My experience has led me to consider the following necessary steps:

1. Know the process or protocol (KNOW)
2. Have a clear, simple document, pictures or video describing the protocol (SHOW)
3. Train people so they can learn and practice the protocol (TEACH)
4. Evaluate the protocol or process using outcomes, metrics and data (REVIEW)
5. Update the protocol (if needed), retrain people so they have the skills (MASTERY)

Training is very important to have successful protocol compliance. The better we can educate, train and implement protocols the better we serve our clients, their employees, their animals and consumers. Often, farmers complain they don't need to be trained or to review protocols because they have been doing this for a long time. As trusted advisors, we need to help them understand that better management, consistency of daily activities, and training to protocols is necessary to prevent procedural drift and to prevent issues of protocol noncompliance. It is imperative as veterinarians that we continue to help our clients and their employees to have simple, clear protocols, and help them review and update those protocols at least annually.

We can also encourage, and their milk processor often requires them, to train and document their training for both themselves and their employees. The FARM[®] program requires this training documentation and additional documentation by the veterinarian annually.² Training requires practicing the skill or protocol and continuing to master the activity. Giving people information once on a video, paper or even in the barn is much different than training people on a protocol so that they can successfully perform the activity.

Simple is best

Protocol compliance is not just for antibiotic therapies. One of the best examples for statistical analysis of protocol compliance can be seen when we examine Ovsynch protocols for timed AI breeding. It is a simple math exercise to determine the protocol compliance for an Ovsynch program. If we evaluate the percentage of compliance to each of the four activities in the protocol, we can quickly see that the compliance level can drop if one or more step is missed. If you have 100 cows enrolled in Ovsynch and you only find 95 of them for the first GNRH shot, 95 for the prostaglandin shot, 95 for the second GNRH and only 95 for the timed AI, you can determine that the compliance rate for this protocol is not 95%. Most people would agree that 95% compliance is pretty good. However, compliance of this Ovsynch program ($95\% * 95\% * 95\% * 95\%$) is actually 81% compliance. This is very important to think about in terms of protocol compliance and keeping things as simple as possible. The more steps there are, the more chances there are for errors and reduction in compliance.

I have realized through decades of work with farmers and their employees, that we need to have the simplest protocol possible with the fewest steps possible and write them with the fewest words. We also need to understand the limitation of treatments and have protocols with just a few options. If the disease is not cured or symptoms have not resolved, these need to be evaluated by the veterinarian and herdsman. Treatment plans with one or two antibiotics, potentially limit antibiotic resistance, residue issues in both meat and milk, and high treatment costs for the dairymen.

Training means practicing

Giving people information is different than training people so they can do something well. How many times did you practice a fire drill at school as a kid? Using the written protocol as the information, we then need to show and train people to do the protocol. When they can practice, get feedback and practice more, they will be more successful at carrying out the protocol consistently. A good example is a written vaccine protocol with various products, routes and ages of calves. You could give a new employee the protocol and show them where the products are stored, hoping that they can administer the vaccines. However,

you may see them giving intranasal vaccines by using a needle up the nostril. We need to make sure we are giving people the information, showing them the proper way, and watching them practice the skill or duty to ensure the protocol is successful.

Records and residue avoidance

Recording breedings, treatments and other metrics associated with protocols and analyzing the data can provide great value for the dairy producer. Helping them to implement simple, easy-to-use treatment records is important not only for regulation but also for FARM program participation as well as many other animal care and welfare programs. Records for regulatory purposes can be on paper or a calendar. Analyzing these paper records for treatment costs, protocol compliance and antibiotic effectiveness is often challenging. However, computer record systems do not automatically mean that these things can be easily accomplished. Farmers often need support from veterinarians and other consultants to set up protocols appropriately in their computer program as well as to help implement a consistent system of documentation in the computer program. Without consistent entry into the computer program, it is often hard to pull out good data to analyze antibiotic use and costs, reproductive program effectiveness or other metrics.

Treatment record requirements, information, resources, and templates are available on the NMPF FARM program's website.² The farm must maintain permanent treatment records, available for review by the Veterinarian of Record, for the treatment of the farm's common diseases and include:

1. Date of treatment
2. Animal treated ID
3. Name of treatment used
4. Disease or condition being treated
5. Dosage administered
6. Route of administration
7. Duration of the treatment
8. Withholding information or withdrawal times for meat and milk

Residues literally keep me up at night. If a producer ships a load of milk that contains antibiotics, the plant calls me or a member of my team. We continue to have a few positive loads arrive at our plants every year. Accidents happen, but we need to have protocols in place, trained people, and follow withholding times to prevent residues. We need to limit the ways that error can happen and implement multiple fail-safe steps before that milk leaves the farm. Our producers are required to have a saleable milk protocol that is a very simple sheet, but it makes people think and document all the steps to prevent treated cows from being milked.

There are many ways to prevent residues: use less antibiotics, use a visible marking on the cow, records in the parlor that employees can easily see at each milking (whiteboards), entry into a computer system so milking unit has a notification or won't even turn on, segregate cows into hospital group, testing milk for individual cows before they're returned to the tank and test the tank before each pickup. One of the biggest issues that I see on dairies that have shipped a positive load is the lack of a hospital pen. Often on smaller dairies or dairies that do not have enough treated cows for a pen, the treated cows are marked but are mixed with the entire herd. This is very hard on employees who must watch for a few marked, treated cows in every line for an entire milking shift. I encourage farmers to try to reduce

the time milkers must be watching for a treated cow and find a way to segregate them. Robotic milking facilities have also had issues with residues in milk. The robot does not accidentally miss a treated cow if a person tells the robot that the cow has antibiotics. Many robot dairies have implemented a protocol so the person treating a cow needs to enter that treatment into the robot for the dumped milk before providing any treatment to the cow.

Updating protocols and annual review

Veterinarians can start the conversation, at least annually, with dairy farmers to update protocols for treatments, vaccination, breeding and other protocols that are happening on the dairy. This is a requirement of the FARM Animal Care program (along with an annual VCPR) and is beneficial for the farm. Procedural drift is real and often we have changed the protocol intentionally or unintentionally. Treatment and vaccination protocols may need to be updated based on data or product changes. Once the change is made, make sure the retraining also occurs for all the people involved. Other protocols must be reviewed to ensure they are still the same and being done correctly. AI breeding, as an example, often needs to be reviewed step by step and all equipment checked for cleanliness, temperature and timing of steps. There are dozens of steps required that could influence the outcome and the conception rate for the cow: temperature of the water bath and changing water regularly; the level of liquid nitrogen in the tank; cleanliness of the AI guns; time that the straw is in the water bath; time after we load a straw into the gun; cleanliness when we insert that gun into that cow; delivering semen to the correct anatomical location inside the cow; remembering to record that cow and the semen straw information into a computer in the correct way on the correct date. Training, review and retraining is imperative, even for people who know how to do a procedure.

Conclusion

Protocol compliance is a great opportunity for veterinarians to be involved on dairies for the success of those protocols. Be proactive to annually review the herd health plan, look at records and data, make changes if needed and participate in training or retraining of employees on dairies to ensure that the protocols have compliance. Reviewing protocols and retraining can improve the processes and outcomes on dairies, for the cows, the employees, the owners, the consumers and the veterinarians.

1. Definition of protocol compliance. www.bing.com/search. Accessed Feb 2, 2022.

2. FARM[®] Animal Care Version 4 requirements, resources, National Milk Producers Federation, 2022. <https://nationaldairyfarm.com>

