NYSCHAP: A Model of Veterinarian Involvement in Animal Health and Environmental Issues

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Abstract

The New York State Cattle Health Assurance Program (NYSCHAP) is a voluntary program of the Division of Animal Industry of the New York State Department of Agriculture and Markets that creates a team including the producer, herd veterinarian, government veterinarians, universities, extension and agricultural related businesses. The team gathers history, current facts, goals, and concerns as well as performs a risk assessment of the animal production unit. From this information a mutually discussed and agreed upon herd plan is developed incorporating "best management practices" to minimize risk, enhance production and performance as well as address environmental issues. The herd becomes a NYSCHAP Herd and the plan is reviewed regularly by the herd veterinarian and annually by the team.

Introduction and Overview

This Cattle Health Assurance Program is the work of a team of veterinarians, animal scientist, dairy producers and agricultural related businesses. State Veterinarian Dr. John Huntley and then Assistant State Veterinarian Dr. Dwight Bruno initially designed it during the early 1990s. The first herd enrolled in 1998. At the time of this writing there are about 700 NYS dairy farms enrolled. There are 15 Certified NYSCHAP Veterinarians who work with herd veterinarians to enroll and annually evaluate herds.

The following text is the written description of the Core Module, which is where each herd starts. Other modules may be started at the initial visit or be added at a later time. They are summarized at the end of this document.

New York State Cattle Health Assurance Program Core Module

Introduction

The New York State Cattle Health Assurance Program (NYSCHAP) is an integrated disease prevention program that utilizes a team of advisors to develop a farm-specific herd health plan. The objectives of this integrated herd plan are to:

- increase the herd's health, productivity, and profitability
- assure food safety, public health, and consumer confidence in dairy and beef products
- promote environmental stewardship

This Core Module is one of several modules that makes up NYSCHAP and is the starting point for enrollment in the program. More information on the NYSCHAP approach and how to enroll appears at the end of this document.

NYSCHAP Team

An advisory team can help develop management plans to address complex issues faced by today's producers. One of the strengths of NYSCHAP is the strong emphasis on this cooperative "team" approach to develop and implement a health assurance program. Program success requires active participation from the producer, herd veterinarian, employees and advisors. Department of Agriculture and Markets' veterinarians or NYSCHAP Certified Herd Health Planner Veterinarians are involved with the initial risk survey and development of the herd plan. Additionally, they work with other team members to evaluate the herd plan annually and validate the farm's implementation of the herd plan over the preceding year.

Implementing and adhering to disease prevention programs is challenging. Vitally important to the success of this program is that team members, particularly the producer, veterinarian, and employees implementing the programs, are firmly committed to the principles and goals of the herd health plan. Accurate animal identification and health recording are also essential for program participation.

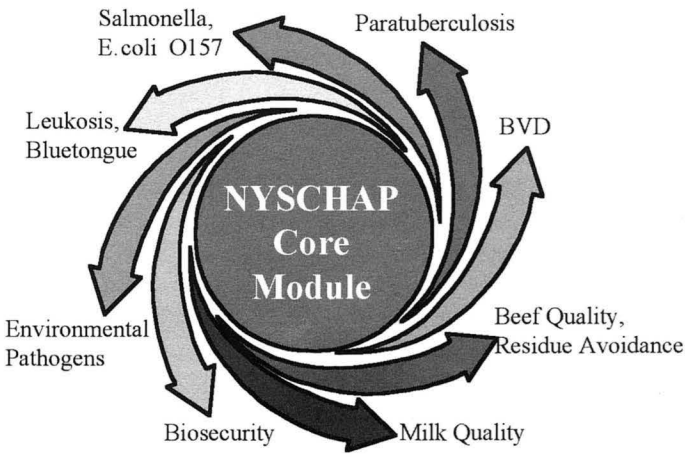
NYSCHAP Structure

The hub of the wheel, consisting of general "best management practices", represents the core module of

the program. These best management practices occupy the center of the health assurance wheel because they will benefit production, animal health, food safety, product quality, and ultimately profit, regardless of the pathogen or herd stressor involved.

The individual modules "spin off" from the core and contain detailed and specific interventions designed to impact a particular issue or pathogen on the farm. The farm plan developed by the NYSCHAP team is farm-specific for each module. For example, if a producer wants to work towards the establishment of a Johne's control program, elements of the core best management practices are implemented, along with specific interventions designed to control and reduce Johne's disease on that farm.

Figure 1.



NYSCHAP Farm Evaluation and Herd Plan Implementation

Step 1: Define Farm Goals and Areas of Concern

The core module provides the broadest level of risk assessment for the farm. The business plans and goals are reviewed. Areas of concern that members of the management team have are noted. Baseline farm data and information on current herd health status are collected to more appropriately develop the dairy's specific program.

Step 2: Assess the Risks

General biosecurity, animal health, quality assurance and environmental risks are then evaluated on the dairy (see section below). The core module risk assessment considers the major pathways that disease organisms or conditions are introduced to and spread within the farm. Key management practices affecting food safety and quality and environmental stewardship are also reviewed.

Step 3: Develop the Herd Plan

The NYSCHAP team members (farm managers, herd veterinarian, Ag & Markets veterinarian, NYSCHAP Certified Herd Health Planner Veterinarian, etc.) develop a herd plan based on knowledge of conditions and goals specific to the farm. In putting the plan together, they will select only the appropriate best management practices for the farm's goals, resources and risks. Above all, the herd plan must be practical to implement.

Step 4: Implement the Herd Plan with All Dairy Personnel

The herd plan, consisting of a prioritized list of best management practices specific to issues identified on the farm, is discussed with farm personnel who have responsibility for the various procedures. This discussion explains the reasons for specific recommendations within the plan, allows for additional input from those actually performing the tasks, and acts to generate interest in and enthusiasm for the program.

Step 5: Evaluate the Herd Plan and Its Implementation

The herd veterinarian briefly reviews the herd plan with key personnel on a quarterly basis. Annually, the entire team conducts a review of the herd plan. Modifications to the plan occur at this time and become the new herd plan.

Farms are recognized annually with the presentation of a certificate that indicates the number of years of participation in the core program and any specific disease modules.

Risk Factors Evaluated in the Core Module

The primary goal of the core module is to minimize disease introduction onto the farm, spread within the farm, and transport off the farm. During the initial visit to the farm, the NYSCHAP team assesses the degree of risk to the farm in four key areas: biosecurity; manure management, and feed and water management; facilities; and food quality assurance.

To accomplish this, all areas where infectious organisms could be introduced to the herd are evaluated. Disease problems in many herds originate when purchased animals enter the herd or home-raised animals return to the herd following a show or fair or raising at a contract grower. In other herds, the infectious organism may enter on the boots or clothing of a visitor or perhaps on foot trimming equipment or with the livestock truck. The potential for introduction by feed and water is also evaluated.

Once in the herd, the spread of infectious organisms must be contained. Areas that can affect the spread of disease within the herd, such as the vaccination pro-

gram, housing, animal grouping and density, personnel and equipment hygiene, and the order in which farm responsibilities are completed are also reviewed.

Manure may contain animal pathogens, and it can be an environmental hazard. Therefore, manure must be managed to minimize the chances of ingestion by other farm livestock, particularly calves and young heifers. Manure must also be managed to minimize runoff into wellheads, streams and lakes. Feed and water can also harbor pathogens and contaminants, so management procedures affecting each of these areas are considered.

The facilities where animals are housed can have a major impact on animal health, well-being, and production. Facilities, equipment, animal handling, or treatment methods must be designed to minimize physical trauma and maximize animal comfort and welfare. Areas including stall or housing design, footing, traffic alleys and flow, air quality and over-crowding are assessed in the core module.

Consumer confidence in food safety and quality is very important to the success of dairy and beef industries. Dairy cows, beef cows, and bob veal calves supply approximately one third of the total non-fed beef produced in the United States. According to the National Non-Fed Beef Quality Audit, antibiotic residues, carcass bruising, injection site abscesses and scarring, and the sale of over- or under-conditioned or disabled cattle all decrease the quality of marketed beef and income for the producer. The quality assurance portion of the core module is designed to evaluate the use of antibiotics and drugs in order to minimize the chances of contaminated milk or meat. Treatment protocols, injection sites, and cattle handling practices are reviewed to minimize damage to the carcass. The goal of this part of the core program is to promote consumer confidence and product quality and enhance farm profitability.

The Core Best Management Practices

Biosecurity

- Cattle should come from a reputable source. If possible, the attending herd veterinarian and the source herd's veterinarian need to establish a reasonable program for testing, vaccination, transport, and quarantine for purchased or re-entering cattle. Whenever possible, bring cattle in from a source herd with a defined health history for diseases of concern, including contagious mastitis, Johne's disease, bovine viral diarrhea, bovine leukosis, heel warts and *Salmonella typhimurium* infection. Quarantine incoming animals for a minimum of three to four weeks and use this time to monitor for clinical disease. Test additions if their health history is unknown.
- Enhance immunity by maintaining a vaccination program for incoming and resident animals.
- Fence line contact, contact at exhibitions, etc., may also serve as sources of infection to the herd. Minimize contact with non-resident animals including cattle, other livestock, pets, pests and wildlife to prevent introduction of infections spread by saliva, respiratory secretions, blood, urine and feces. Use vaccination and segregation protocols to minimize these risks.

People

- Farm visitors should not enter any facilities on the farm unless they have a **real** need to do so.
- Visitors who have to enter animal facilities should wash their boots with a disinfectant or put on plastic boots before doing so. Likewise, insist that all employees, advisors and visitors enter only with clean clothing and disinfected equipment. Use good hygiene to prevent movement of manure around the farm. Provide boot brushes, disinfectant and boot wash areas or disposable boots when moving between areas on the farm.
- Start work routines with young stock and move toward adults to prevent contamination of young stock areas with adult manure. Handle sick animals last.
- Work with every person who routinely enters the barn to make sure they understand concerns for biosecurity.

Vehicles and Equipment

- Establish parking areas away from any animals. Prevent movement of and contact with mud and feces introduced from other farms. Haul dead or down cows out to the renderer's truck as far away from the barn as possible.
- Do not allow off-farm vehicles to drive into or through the barn. The potential to contaminate feed with manure from another farm and for fecal-oral transmission of disease is very real.
- Equipment, such as hoof-trimming tables, should be washed thoroughly before it is brought into the facility. Equipment must be cleaned and disinfected between cows, groups, and farms.
- Make sure that the feed wagon does not have to drive through manure before entering the barn or bunk silo. KEEP MANURE OUT OF THE FEED!
- Use separate equipment for handling feed and manure.

Environment and Facilities

- Pay attention to ventilation in the barn, cow

resting behavior and posture, stall design, footing, etc. Minimize overcrowding. Cow comfort plays a large role in the health of the animals.

Nutrition and Feeding

- Analyze forages to meet quality standards. Use clean equipment to mix and deliver feeds. Store and label pesticides and additives safely away from feeds.
- Buy feeds from dealers with quality controls in place. Ensure feed mill adheres to the FDA ban on feeding mammalian proteins to ruminants. Adopt rodent control programs and keep pets and pests out of feedstuffs. The opportunity for feeds to be contaminated with salmonella or other organisms by rodents, birds or pets at the feed mill or in storage on the farm is quite real.

Water

- Check water occasionally for microbial contamination and other quality measures.
- Keep cattle away from surface water sources that may be a point of entry or export for disease.

Manure Management

- Ensure that cow, people or vehicular traffic does not carry manure into feed or feed storage areas or between animals groups.
- Manure removal frequency must be sufficient to avoid accumulation on facilities or equipment.

Environmental Stewardship

- Manure must not be spread near watercourses, on hydrologically sensitive areas, or at times where the probability of runoff or subsurface flows is high.
- Minimize potential for manure runoff from barnyards. Seal household and barnyard wells to prevent contamination of ground water.

Product Quality Assurance

- Accurate animal identification and health records are essential for health and quality assurance programs on farms.
- Prevent meat and milk residues from drug or chemical contaminants by providing written standard operating procedures and employee training for drug use and storage, animal treatments, records, and drug withdrawal from milk and beef.
- Prevent bruising and carcass condemnations. Handle and transport cattle in such a fashion to minimize stress, injury and/or bruising.
- Inspect animal facilities and housing for sharp objects that can bruise carcasses and damage hides.
- Market cattle to improve carcass value before they become either too fat or too thin and emaciated.
- Market cattle with physical or health-related disorders in a timely manner to avoid condemnations and minimize unnecessary suffering.
- Eliminate all intramuscular injections in the hindquarters to protect the higher-value cuts obtained from this area.
- Administer products labeled for subcutaneous (SQ) use in front of the shoulders. The preferred sites for intramuscular injection include the large muscle masses of the shoulder and neck only (no exceptions, regardless of age).

That sounds like a lot to keep track of on the farm. The best management practices described here represent a "laundry list" of most of the practices promoted by NYSCHAP. On any particular farm, only a handful of these might be included in the herd plan. The farm advisory team develops the priorities and decides how to address them, which is why it is especially important to involve everyone in the effort. If everyone takes responsibility for their part of a good herd plan, implementing it should not cost much, and preventing disease from taking hold of the herd should save a lot.

NYSCHAP can provide the structure to assess the most important disease issues on the farm and then develop a practical plan to reduce those risks. NYSCHAP disease or issue modules currently available include:

Johne's Disease – Johne's disease in cattle is a chronic, incurable bacterial infection that primarily affects the lower small intestine of cattle. The NYSCHAP Johne's disease module can help identify the risks for introduction and spread of Johne's disease on cattle farms. NYSCHAP focuses on best management practices and, if testing is part of the herd plan, offers a discount on Johne's testing performed at the NYS Animal Health Diagnostic Laboratory.

Bovine viral diarrhea - Bovine viral diarrhea is a disease of cattle caused by the bovine viral diarrhea virus. The disease is widespread and can cause variable signs including respiratory infection, diarrhea, and reproduction problems. The NYSCHAP module identifies risks and intervention strategies that allow farms to reduce the economic cost of this disease.

Salmonellosis - Salmonellosis is an infection of the digestive tract caused the bacterium *Salmonella*

enterica. Salmonella is widespread on dairy farms and can be found on a large number of farms and in many species of animals, including mammals, birds, insects, reptiles and humans. Preventive measures taken on cattle farms, as recommended in the NYSCHAP Salmonellosis module, can significantly limit the impact of the disease.

Mastitis – Mastitis remains one of the most costly diseases of dairy cattle in the United States despite extensive research and control efforts. The NYSCHAP mastitis module contains materials that help producers and their herd veterinarians develop farm-specific treatment protocols, record keeping systems and udder health monitoring programs.

Market Cow and Bull Quality – Assuring the quality of market cows and bulls is essential to provide consumers with nutritious, wholesome and safe beef to eat. The 1999 Market Cow and Bull Quality Audit found a loss of $68.82 per animal due to quality defects. The NYSCHAP Market Cow and Bull Module gives producers the strategies to reclaim those dollars.

Herd Expansion – Biological risks encountered by an expanding dairy business include infectious diseases (Johne's, BVD, pneumonia, mastitis, footwarts, etc.) and noninfectious problems (adaptations to new facilities and feed). The NYSCHAP herd expansion module can help dairies develop a sound expansion plan.

Bovine leukosis virus – BLV is a blood borne disease that clinically affects about 5% of cattle. The primary clinical sign is tumors. BLV is very prevalent in NY dairy herds and is the leading cause of condemnation of carcasses. The NYSCHAP BLV module can help farmers implement best management practices to decrease or eradicate BLV.

Modules that are presently being developed include environmental pathogens, animal well-being and emergency preparedness for cattle farms.

How to Enroll in NYSCHAP

To enroll in NYSCHAP, the producer is encouraged to work through their herd veterinarian. The herd veterinarian then makes arrangements with the regional field veterinarian from the Department of Agriculture and Markets. Additional information, is available from the sources below:

NYS Division of Animal Industry at 518-457-3502
The NYSCHAP coordinator, at 607-255-8202
The NYSCHAP website at:
http://nyschap.vet.cornell.edu