Evaluation of Attitudes of Participating Groups in the Colorado Beef National Animal Health Monitoring System Pilot Program

DM Grotelueschen, *DVM, MS*
Department of Veterinary and Biomedical Sciences
University of Nebraska
Panhandle Research & Extension Center
4502 Avenue I, Scottsbluff, NE 69361.
RG Mortimer, *MS, DVM*
MD Salman, *DVM, PhD*
ME King, *BS, MS*
Departments of Clinical Sciences, and Environmental Health
College of Veterinary Medicine and Biomedical Sciences
Colorado State University
KG Odde, *DVM, PhD*
Pfizer Animal Health
Senior Veterinarian, Livestock Technical Services.

Introduction and Methods

The National Animal Health Monitoring System (NAHMS) was established due to the need for information concerning the incidence of animal disease and the associated costs of disease.[1] The program was first implemented by the United States Department of Agriculture, Animal and Plant Health Inspection Service (USDA, APHIS) in 1983 as the National Animal Disease Detection System but has been renamed.[2,3] Seven states - California, Colorado, Georgia, Iowa, Michigan, Ohio, and Tennessee completed pilot projects during the inception of NAHMS.[4] Colorado completed the three years of its pilot program from 1984 through 1988. In the Colorado NAHMS program, cow/calf producers were selected randomly from a listing of the National Agricultural Statistics Service. Producers were contacted and participated on a voluntary basis. Findings from the pilot program have been published in journal articles.[5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21]

Three basic components were proposed in the pilot phase of NAHMS. They were the **epidemiologic** component, the **economic** component, and the **evaluation** component.[1] The epidemiologic component was concerned with collection of data about disease incidence, including information related to identification of risk factors for disease. The economic component attached monetary significance to health occurrences. It also associated cost/benefit ratios with various management decisions and characteristics of individual operations. Food animal veterinary practitioners increasingly deal with animals on a population basis and can use this information in their animal health programming efforts.

The third major component of the NAHMS pilot program in Colorado was the evaluation. Evaluation of the pilot project was essential to improve the program, to provide public accountability, to increase knowledge about it, and to provide assessment criteria for future development. There were two primary areas of focus in the evaluation process. They were the methodology of the study, which included the data collection methods and the procedures used to validate and analyze the data, and NAHMS itself, including input from participants.

Two methods of evaluation were used. Internal, or formative, evaluation and change have been accomplished on a continual basis since the inception of NAHMS through meetings and personal contacts within the NAHMS program, followed by the appropriate implementation of change. Additionally, NAHMS collection methods and data were evaluated through a validation phase. In Colorado, fourteen herds in 1986-87 and 25 herds in 1987-1988 were selected for intensive analysis and diagnostic interpretation of health events. This information was used to validate the methodology, including accuracy of disease diagnosis reporting, in participating NAHMS herds.

An external evaluation was also conducted by individuals or groups not associated with the project. It provided a summation whereby a final evaluation of the pilot phase of the program could be completed. This report discusses a portion of the external evaluation of

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the program. Most evaluations of animal health programs involving surveillance and data collection lack an evaluation of this type. An approach such as this, although limited to one state, can be used as a prototype for similar programs conducted in the United States and other countries.

This evaluation involved all persons associated with years 2 and 3 of the Colorado NAHMS program, including participating producers, veterinary practitioners who had client(s) participating in the program, and Veterinary Medical Officers in the State of Colorado. This method has been used as a model for attitude evaluation of similar animal health programs.

Personal attitudinal surveys were conducted with participants in 1986-1987 and 1987-1988 of the Colorado NAHMS pilot project. These participants included producers, veterinary practitioners involved with participating operations, and State and Federal Veterinary Medical Officers who collected the data. These surveys explored the attitudes, relationships, and personal opinions related to the Colorado NAHMS program. The specific objective of the surveys was to evaluate the attitudes of participating individuals toward NAHMS.

The surveys were written and administered by a neutral party not familiar with NAHMS participating herds and having no connections to the Federal and State agencies involved. Separate surveys were developed for each participating group: cow/calf producers, veterinary practitioners and State and Federal Veterinary Medical Officers in Colorado.

Surveys[a] were written in such a manner that participants were able to provide their comments as part of the answers to the questions. Because of this approach, descriptive methods were used to interpret data rather than using statistical analysis. The descriptive survey method, utilizing direct personal interviews, was chosen as a method of administering the surveys in order to best converse with participants and obtain their impressions of NAHMS.[22] All participating producers contacted were interviewed. They had received notice previously from Veterinary Medical Officers that these surveys were being conducted. Neither veterinary practitioners nor Veterinary Medical Officers were present during the interviews. The personal interviews were conducted by the senior author.

Producer participation in the NAHMS pilot program was confidential so no public listing of these persons was available. Personal interviews of participating producers were coordinated through Veterinary Medical Officers and the local USDA-APHIS office. Producers were contacted by telephone to arrange an interview time. Producers identified the veterinary practitioners who provided veterinary services to their operations. These veterinarians were interviewed. No refusals to be interviewed were received from livestock producers. One producer had moved to another state and was omitted from the interview process. Three producers were deceased between initial enrollment in NAHMS and the evaluation interview. Family members were interviewed in two cases. The other participating operation was omitted.

The designated veterinary practitioners interviews began with a telephone contact. Ten of the 44 veterinarians (22.7%) contacted indicated they had no knowledge of NAHMS or of their client's participation. These persons were not interviewed further. Personal interviews were conducted with the remaining 34 veterinarians. No veterinary practitioner or Veterinary Medical Officer interviews were conducted until the completion of all producer participant surveys. The personal interviews of Veterinary Medical Officers were conducted using another survey form designed for those individuals.

Results and Discussion

Information regarding characteristics of producer participants was gathered from 71 beef producers (Table 1). Most of the producers in the NAHMS pilot project used their veterinary practitioner for individual sick animal diagnosis and treatment, herd health services, some form of consultation, and medicine purchases. Over one-half of the producers used their veterinarian for nutritional counseling. Sixty-nine of the 71 persons interviewed indicated they used veterinary services in their operation. The individual not answering this question indicated that he had a small herd and had not contacted a veterinarian in a number of years. One producer indicated he did not use veterinary services. Most producers included their veterinarian in discussions about NAHMS. The total number of contacts that a producer had with his veterinary practitioner, including telephone, ranch visits, clinic visits, and other contacts is presented. In previous surveys to measure the importance of the local veterinarian to livestock operations, beef producers indicated the local veterinarian to be very important for diagnosis of sick/injured animals by 80% of respondents, for required regulatory testing by 53%, for information about feed and nutrition by 14%, for animal vaccine purchases by 51%, for purchases of medications/antibiotics by 53%, for treatment of sick/injured cattle by 80%, for herd health management by 45%, and for information about reproductive problems by 48% of respondents, respectively. These data compare favorably except for medicine purchases and use of nutritional consultation. Difference may reflect marketing emphasis by veterinary practices involved and also expertise of veterinary practitioners as well as availability of medicines and nutritional information from other sources. The NAHMS study did not evaluate the relative importance of veterinary ser-

[a]Questionnaire forms are available from the senior author upon request.

vices utilized and represented only one state in comparison to the national study.

Table 1. Producer survey results.

Question	Response (%)		
	Yes	No	No answer
Do you use the services of a private veterinary practitioner?	69 (97.2)	1 (1.4)	1 (1.4)
Do you include your veterinarian in discussions of NAHMS?	50 (70.4)	14 (19.7)	7 (9.9)
Do you feel you can benefit economically from information gained from this program?	52 (73.2)	18 (25.4)	1 (1.4)
Are you presently keeping records not previously kept before your NAHMS participation?	28 (39.4)	42 (59.2)	1 (1.4)
Have you made any changes related to animal health management since beginning NAHMS?	35 (49.3)	36 (50.7)	0
Do you utilize veterinary services for:	Number (%)		
Sick animal diagnosis	62 (87.3)		
Herd health	62 (87.3)		
Consultation	62 (87.3)		
Medicine purchases	53 (74.6)		
Nutrition	38 (53.5)		
Number of contacts with veterinarian per year:	Number (%)		
0	1 (1.4)		
1-4	7 (9.9)		
5-10	15 (21.1)		
11-20	24 (33.9)		
21-50	17 (23.9)		
Greater than 50	4 (5.6)		
No response	3 (4.2)		

Fifty-two of 71 producers surveyed (73.2%) felt they had gained economic benefit through their participation in NAHMS. Comments on the reasons for the economic benefits of the program ranged from disease diagnoses to information they had gained through NAHMS personnel, especially Veterinary Medical Officers, which they could use to improve their operation. The NAHMS program had an effect on records kept by producers. Over 39% indicated they were now keeping records not kept before their NAHMS participation. Many of the additional records pertain to disease occurrence and costs. Nearly one-half of the producers indicated they made some change in animal health management which could be related to their NAHMS participation.

Numerous comments and suggestions were obtained from producers. Producers had a special interest in labor costs and treatment costs. This type of information involving cow/calf operations is not readily available to the industry. Producers were very complimentary of Veterinary Medical Officers. Several producers indicated the collection of blood samples from cows for the subsampling groups to be a problem area of the program. Coordination of work times for bleeding cows, skill in obtaining blood samples, the method used, and the bleeding process itself were cited as areas of the program that should be improved. Generally, producers felt more veterinary practitioner involvement in the program could increase the accuracy of the data and attention to detail in the program as well as increase benefits to the producer and the practicing veterinarian.

Many producers described NAHMS as a needed project and a good investment of federal money. The educational value of the information for consumers and students was mentioned. Most indicated NAHMS should be expanded to other parts of the country. Several participants suggested a commitment of more than one year for each producer in the program.

Most veterinary practitioners desired increased participation in NAHMS (Table 2). They felt that programs such as NAHMS had potential for expanding food animal practice. However, veterinarians generally did not find NAHMS to be of assistance in improving client health programs or in altering areas of practice emphasis. Concerns expressed by practitioners were directed toward accuracy of disease diagnoses made by producers. Some individuals indicated more diagnostic input from practitioners would increase accuracy of the data. Many veterinarians made comments stating they had little knowledge of the program. Many answered questions while indicating they had little of the background necessary for the answer. Suggestions were also made that more communication needs to be initiated and maintained with the veterinary practitioner. Comments were made that NAHMS is a good concept with good potential for benefits for both livestock producers and veterinarians.

Table 2. Veterinary participant survey results.

Question	Response (%)		
	Yes	No	No answer
Have you heard of the National Animal Health Monitoring System?	34 (77.3)	10 (22.7)	0
Are you aware of your client(s) participation in NAHMS?	34 (77.3)	10 (22.7)	0
Has/will NAHMS had/have any effect on your practice emphasis?	2 (5.9)	32 (94.1)	0
Can NAHMS potentially be used to improve and/or expand the area of food animal practice?	23 (67.6)	7 (20.6)	4 (11.8)
Have you made any changes in your client's individual animal health program due to NAHMS?	6 (17.7)	27 (79.4)	11 (2.9)
As a practitioner would you like your level of participation in NAHMS to:	Number %		
Increase	19 (55.9)		
Decrease	1 (2.9)		
Remain the same	10 (29.4)		
No response	4 (11.8)		

The eleven participating Veterinary Medical Officers were surveyed (Table 3). Most felt the Veterinary Medical Officer was the best person to collect data, to be the core person involved, and was needed to give credibility to the data. Comments made by producers and veterinary practitioners about the NAHMS program to Veterinary Medical Officers were generally favorable. Some Veterinary Medical Officers said they had minimal or no contact with veterinarians and that practitioners were somewhat indifferent to NAHMS. Concern was expressed regarding the accuracy of diagnoses made by owners. A suggestion was made that the goals of the program need to be better defined in order to communicate effectively with prospective cooperators.

Table 3. VMO survey results.

Question	Response (%)		
	Yes	No	No answer
Do you feel the VMO is the person in the best position for collection of NAHMS data?	9 (81.8)	2 (18.2)	0
Are comments from participating producers generally favorable about NAHMS?	11 (100)	0	0
Do you feel the individual producer cooperation during this time when he is participating in the NAHMS program:	Number %		
Increased	6 (54.5)		
Decreased	2 (18.2)		
Stayed the same	2 (18.2)		
No response	1 (9.1)		

The participating beef producers had a good understanding of the purposes and goals of the NAHMS program. They felt the program provided useful information to their operations regarding incidence and costs of disease. They were very complimentary to the Veterinary Medical Officer they worked with and indicated willingness to participate in future years. Some owners felt more accurate information could be collected if participation was greater than one year in length.

Private veterinary practitioners were less informed about NAHMS than were producers. However, it appears that transfer of information from NAHMS to practitioners was, in many cases, minimal or nonexistent. Many veterinarians felt the program value could be increased by more veterinary involvement and were willing to increase their contribution. Increased accuracy of disease diagnosis was suggested as an area needing attention. They felt more communication with NAHMS personnel would be beneficial.

Veterinary Medical Officers felt NAHMS was a way they could have a positive influence on livestock production. They felt the program was rewarding to them, as well as to participating producers.

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