

B. Collections of Information Employing Statistical Methods

1. Describe the potential respondent universe and any sampling or other respondent selection methods to be used.

Most investigations of outbreaks or emergencies require interviews of all producers whose operations are affected by the condition in question. Investigators may, on occasion, interview a sample of affected operations and matched controls (non-affected operations). The respondent universe for this study includes Grade A dairy operations with 500 or more cows located in 5 states (California, Colorado, Idaho, Texas, and Washington). Pasture operations will not be sampled. Operations in California will be considered 'cases' while operations in the other 4 States will be used as 'controls'.

2. Describe the procedures for the collection of information including:

Statistical methodology for stratification and sample selection:

Each of the 5 states will use their respective Grade A dairy list to randomly select operations to survey. Since information such as size and type of operation (e.g., pasture) will not be known until the dairy is contacted, random numbers will be assigned to all dairies listed and then sorted. Dairies will be contacted based on the order determined by the randomly generated number assigned to each operation and an eligibility determination will be made (500 or more cows and non pasture housing). Once the State has met the sample size for their respective State, data collection will stop. Data will be collected by personal interview.

1. Estimation procedures:

The sampling design is a random sample but there are eligibility requirements as noted above.

2. Degree of accuracy needed:

Based on having the proportion of 0.8 cases and 0.5 controls exposed to a specific management practice and having a power of .8, the sample size needed for California was 30 dairies. The number of controls/case was set at 2.5 which resulted in 20 dairies sampled for the 4 control States.

• Unusual problems requiring specialized sampling procedures and data collection cycles:

No specialized sampling procedures or data collection cycles are anticipated.

3. Describe methods to maximize response rates and to deal with issues of non-responses:

Study Design:

- ☐ The investigations minimize collection of data to that which is absolutely necessary.
- ☐ Many questions have been repeated from previous NAHMS dairy studies conducted in 1991-92, 1996, 2002, 2007, and 2011.

- ☐ NAHMS has worked closely with industry to design and carry out this epidemiologic investigation.
- ☐ In many instances, the State or Federal Official conducting the interviews has worked with these producers in the past.

Contacting Respondents:

- Respondents may be contacted directly by an APHIS or State designated data collector via email, mail questionnaire, telephone, or farm visit depending on the situation.

Data Collection Steps:

- ☐ Respondents will complete the questionnaires via a personal interview.

Data Analysis Steps:

No adjustment for non-response will be used in this study. Individual responses from the case operations will be compared with those from the control operations using appropriate statistical methods. After univariable evaluation, those responses/variables eligible will be evaluated using multivariable methods.

4. Describe any tests of procedures or methods to be undertaken.

Pilot tests of procedures for emergency outbreak investigations are rare because of the lack of time available before an investigation proceeds. However, for investigations which are similar, investigators may use forms or questions revised from previous epidemiologic investigations or questions from previous NAHMS studies. The questionnaire has been reviewed by a variety of experts including academic researchers, industry representatives, extension agents, veterinarians, and epidemiologists.

- 1. Provide the name and telephone number of individuals consulted on statistical aspects of the design and the name of the agency unit, contractor(s), grantee(s), or other person(s) who will actually collect and /or analyze the information for the agency.**

The statistical aspects of the design were coordinated by Dr. Bruce Wagner, Statistician and Center Director, USDA: APHIS, Veterinary Services, CEAH, Fort Collins, CO, (970) 494-7256.

The contact person for data collection is:

- Dr. John Clifford, Deputy Administrator, USDA: APHIS, Veterinary Services, Washington, DC (202) 447-6835.

Analysis of the data will be accomplished by NAHMS veterinarians, epidemiologists, and statisticians under the direction of:

- Dr. Bruce Wagner, National Animal Health Monitoring System, USDA: APHIS, VS, CEAH, 2150 Centre Avenue, Building B MS2E7, Fort Collins, CO 80526-8117 (970) 494-7256.

In most cases, investigators collecting information may be State, Federal, or local officials. All investigations are supervised by experienced epidemiologists with expert statistical resources available.