Collecting Vital Information on Animal Health

National Animal Health Monitoring System (NAHMS) national studies provide essential information on livestock and poultry health and management to decisionmakers, including producers, researchers, and policymakers. Each animal group is studied at regular intervals, providing up-to-date and trend information needed to monitor animal health, support trade decisions, assess research and product development needs, answer questions for consumers, and set policy.

Serving Stakeholders

When questions arise about the health and management of livestock, poultry, and farmed aquatic animals in the United States, NAHMS often provides the answers. Through periodic national studies of these animals, NAHMS provides stakeholders in the private and public sectors with valuable information on disease occurrence and exposure to disease agents, management practices, productivity, knowledge gaps, and other important topics. These data support many information needs, including those below:

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- NAHMS data on producer biosecurity practices and animal movements (such as transport distances and frequencies) for multiple animal industries have been essential in establishing parameters for the North American Animal Disease Spread Model, which simulates the spread and control of highly contagious diseases in susceptible animals.
- After hurricanes Katrina and Rita damaged or destroyed catfish ponds, NAHMS data documenting producers' standard practices for draining and reconstructing ponds were used to provide an objective basis for calculating requests for Federal assistance.
- Trend data collected between 1990 and 2006 by four NAHMS swine studies documented the decline and virtual elimination of trichinae in commercial market swine and showed a corresponding decrease in the use of production practices that contribute to trichinae infection (such as feeding uncooked food waste to swine).

What Is NAHMS?

NAHMS is a program that conducts national studies by combining the efforts of multiple government agencies, producers and other industry representatives, academic institutions, and public- and animal-health professionals. These efforts are organized by a multidisciplinary group within the Centers for Epidemiology and Animal Health, a program within the U.S. Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS). This group is composed of veterinary epidemiologists, livestock commodity specialists, statisticians, a trade economist, a technical communicator, and technical support staff.

What Is a NAHMS National Study?

A national study generally focuses on one animal commodity or production type (such as swine production or beef cow-calf operations). The study typically consists of one or more questionnaires and might include collection of biological samples (such as blood, feces, milk, feed) related to the study objectives. To be considered national in scope, each study is designed to include the States that represent at least 70 percent of the targeted animal population and at least 70 percent of operations with the targeted animal in the United States. A study typically includes fewer than 25 States, enabling more efficient use of resources.

The interval between studies for each commodity or production type depends on information needs. In general, swine, dairy, beef, and poultry commodities are studied about every 5 years, while other commodities are studied at longer intervals. Since 1990, NAHMS has conducted multiple national studies of the following commodity groups:

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- **Swine** (1990, 1995, 2000, and 2006)
- **Dairy** (1991–92, 1996, 2002, and 2007)
- **Beef cow-calf** (1992–93, 1997, and 2007–08)
- **Beef feedlot** (1994 and 1999)
- **Poultry** (1999, 2004, and 2010)
- **Sheep** (1996 and 2001) **and goats** (2009)
- **Catfish** (1997, 2003, and 2010)
- **Horses and other equids** (1998 and 2005)

Origin of NAHMS

The need for accurate agricultural information has been formally recognized since 1884, when the Animal Industry Act directed the Bureau of Animal Industry (now APHIS) to collect information that would be "valuable to the agricultural and commercial interests of the country." In the mid-1970s, the National Academy of Sciences called for greater efforts to meet the information needs of producers, veterinarians, academics, educators, and government policymakers. Subsequently, NAHMS was formed and, by 1990, began studying the Nation's livestock, poultry, and farmed aquatic animals. NAHMS provides the science-based, statistically sound information essential to decisionmaking.

What Is the Study Process?

From initial planning to full reporting of results, each study takes about 4 years. A new study begins roughly every year, so several studies are in progress at any time. The cycle for each study consists of the following five general phases:

1. **Information needs assessment.** To help focus the study and define the priority objectives, stakeholders from industry, academia, Federal and State governmental agencies, and public- and animal-health organizations provide input to identify critical information gaps in animal health and management.

Hallmarks of a NAHMS National Study

- *National in scope*
- *Collaborative*
- *Voluntary*
- *Confidential*
- *Scientifically based and statistically valid*

2. **Questionnaire development and sampling design.** Questionnaires are written and pretested to ensure that they will capture the data needed to fulfill the study's objectives and yield thorough, accurate information.

NAHMS works with USDA's National Agricultural Statistics Service (NASS) to randomly select operations by size for potential participation and to ensure that they accurately and precisely represent the targeted national livestock and poultry populations.

3. **Field implementation.** After specific training, NASS personnel contact selected producers to complete the questionnaire. If the study includes additional components, interested producers provide written consent allowing Federal and State animal-health personnel to contact them about continuing in the study. Questionnaires are usually completed during in-person interviews. If the study includes biological sampling, animal-health professionals and/or the producers themselves collect and ship the samples to designated veterinary diagnostic laboratories. Producers then receive results of biological sample testing.

Bovine Veterinarian Magazine, Geni Wren

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Participation in NAHMS national studies is voluntary, and producer identities and the data are treated as confidential business information. No information is released that would enable the identification of individual producers.

4. **Data validation and analysis.** After ensuring that the data are valid, NAHMS veterinary epidemiologists and statisticians analyze them, beginning with simple methods (such as percentages and averages) that summarize the findings. Subsequently, more detailed statistical methods are used to examine the data, often to look for relationships among management practices and disease occurrence. Analyses adjust for statistical complexities associated with study design and for operations that do not participate in certain aspects of the study.

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5. **Report preparation and distribution.** NAHMS statisticians, commodity specialists, and epidemiologists work together to generate summaries that reflect the national and regional populations of animals or operations and interpret the results. Primary products from the study include descriptive reports and concise information sheets. Descriptive reports contain tables, graphs, and some textual interpretation of study results. Information sheets briefly address very specific topics, such as vaccination or biosecurity practices. These products undergo extensive review by subject-matter specialists before they are released.

For More Information...

To access reports from previous NAHMS national studies or information on upcoming studies, visit the NAHMS Web site at http://nahms.aphis.usda.gov.

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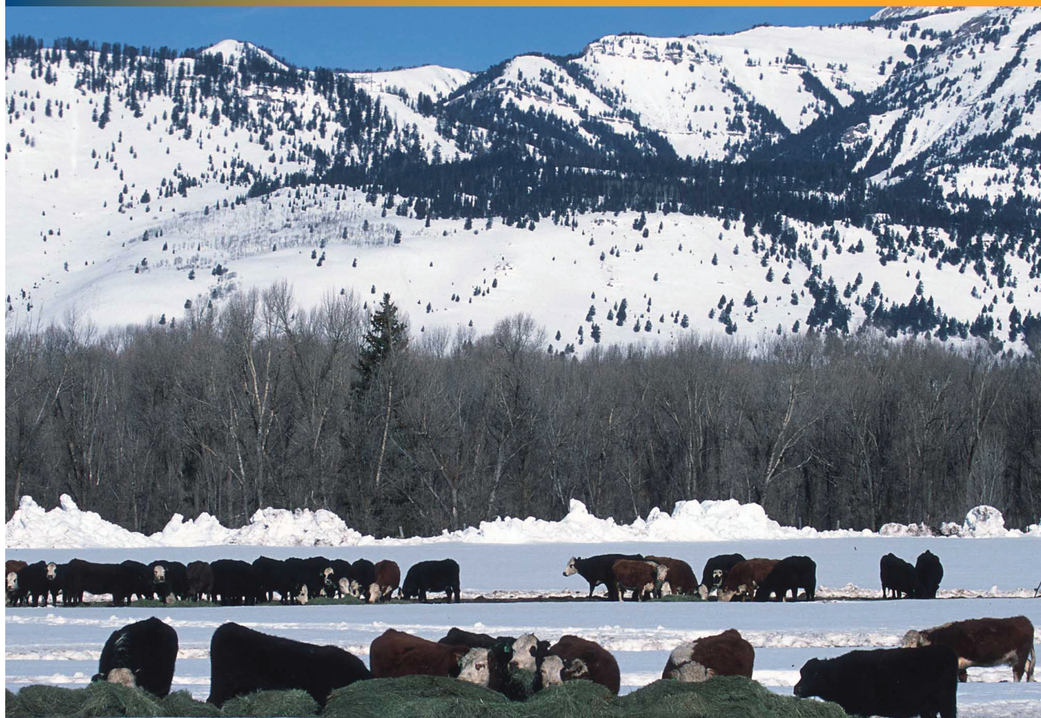
National Studies of U.S. Livestock and Poultry