

Introduction

This document is intended to be a guide to potential sources of equine health data in the United States. Readers are provided with enough information to assess the usefulness of the resources for their needs.

The purpose of this catalog is to document potential sources of equine health and demographic data. It was prepared as background information for a possible equine health monitoring study by the Centers for Epidemiology and Animal Health. It is hoped that this catalog will therefore serve as a valuable resource to anyone interested in exploring the possibilities for equine health monitoring.

Equine is the species name for multiple domestic animals including the horse, pony, mule and donkey. Uses of the animals considered to make up the equine industry are as varied as the animals themselves. The multiple uses of these animals include but are not limited to: racing; showing; three day event; rodeo; exhibition; breeding; working as draft animals and as a means of transportation in cities, parks and forests; as part of rehabilitation programs for the handicapped; pleasure riding; companionship for the owner; and as a source of food especially in foreign markets. Multiple registries for horses, ponies, mules and donkeys exist, but many animals are not registered within any organization.

Many opportunities exist for equine health monitoring; however, due to the diversity of the industry, no one means alone will be suitable. A comprehensive program will necessitate a portfolio approach. Selected potential and existing sources of equine health data within the United States were explored. Information from pharmaceutical companies and the biological licensing agency could serve as potential data sources but were not pursued as a part of this report. No international data sources were explored. Selected equine-related associations are included as potential sources of equine health data. This report includes a description of each data source, the perceived advantages and limitations of the data. Examples of data use, where available, are included as illustrations and are not necessarily comprehensive. For data sources which currently have little available data, advantages and limitations of the data source are not listed. Information may be repeated in certain sections of this document so that the text regarding each data source is complete in and of itself.

This document was prepared for the United States Department of Agriculture: Animal Plant Health Inspection Service: Veterinary Sciences, Centers for Epidemiology and Animal Health (USDA:APHIS:VS, CEAH). Sources and contacts for information listed were current as of January 1995.

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1. Equine enumeration and economic impact studies.

Individual State Studies:

A limited number of States have performed equine enumeration and economic impact studies. The studies have been performed primarily by the Agricultural Statistics Office. In some States University departments of economics and/or population medicine provided assistance. Funding for the studies has been in part or total from the equine industry of the State in most instances. The States which have performed equine enumeration and economic impact studies since 1985 include the following: New York, New Jersey, Pennsylvania, Tennessee, Michigan and Wisconsin. In all of these studies, the number and location of horses, ponies, mules and donkeys were estimated, as well as the economic impact of the equine industry. The reports provide information on the location of horse populations and on the use and type of horses in the State. These studies indicate that the horse industry is of substantial economic value (hundreds of millions of dollars per State). Due to the substantial cost of these enumeration and economic impact studies, most States have performed them only once or infrequently rather than on an annual basis. A substantial portion of the cost of the studies has been in building an owner's list from multiple sources (list frame) and a land area canvassing for equine (area frame). Survey reports contain details on how the list frame was built, how many surveys were sent, the return rate and the sampling method used to target site visits to horse owners in each area. The list frame of horse owners, which was developed to conduct the enumeration and economic impact study, was utilized to provide demographic information and facilitated subsequent health monitoring studies in some States (MI, NY). The Michigan Equine Monitoring System (MEMS) has performed three phases of equine monitoring. Phase I described the demographics of the equine industry in the State while Phases II and III focused on health monitoring. In Phase II, 1,921 horses on 62 operations were monitored for 12 months to determine the mortality and morbidity rate by disease. The Phase II MEMS report is currently available. The Phase III report is being written in 1995. The Kansas Board of Agriculture has begun an equine economic and enumeration study which should be completed by 1996. A prospectus of the horse industry has been compiled based on existing State equine information in Kentucky and Texas.

Advantages.

Advantages of these studies include: describe the horse population in the State, provide a list frame of horse owners for future health monitoring and establish the importance of the equine industry from an economic impact standpoint.

Limitations.

Limitations of these State enumeration studies are lack of correlation with State estimates provided by other sources such as the agricultural

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census and the limited frequency with which the studies are performed.

Sources.

Sources of State Estimates of Horse Numbers and Economic Impact:

New York Agricultural Statistics Services
Department of Agriculture and Markets
1 Winners Circle
Albany, NY 12235
c/o R. Schooley, 518-457-5570

State of New Jersey Agricultural Statistics Service
Room 204 Health and Agriculture Building
CN-330 New Warren Street
Trenton, NJ 08625
c/o R.J. Battaglia, 609-292-6385

Pennsylvania Agricultural Statistics Service
Room G-19
2301 N. Cameron Street
Harrisburg, PA 17110
c/o W.C. Evans, 717-782-3704

State of Michigan Agricultural Statistics Department
201 Federal Building
Lansing, MI 48909
c/o D.J. Fedewa (Phase I), 517-377-1831

or

Population Medicine Center
A109 Veterinary Medical Center
Michigan State University
East Michigan, MI 48824-1314
c/o Dr. John Kaneene (Phase II and III), 517-353-5941

or

Michigan Department of Agriculture,
Animal Industry Division
P.O. Box 30017
Lansing, MI 48909
c/o Dr. Michael Chaddock (Phase II and III), 517-373-1077

Tennessee Agricultural Statistics Service
P.O. Box 41505
Nashville, TN 37204-1505
c/o Linda Larsch, 800-626-0987

Wisconsin Agricultural Statistics Service

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P.O. Box 9160
Madison, WI 53715
608-264-5317

or

Wisconsin State Horse Council, Inc.
1675 Observatory Drive
Madison, WI 53706

Kansas Board of Agriculture
Agricultural Statistics Service
632 S.W. VanBuren, Room 200
Topeka, KS 66601-3534
c/o T.J. Byram, 913-233-2230

Population Estimates for the Texas Horse Industry
Department of Agricultural Economics
Texas Agricultural Experiment Station
The Texas AM University System
College Station, TX
c/o E.A. Hiller

Prospectus for the Equine Industry for Kentucky
Department of Veterinary Science
108 Gluck Equine Research Center
University of Kentucky
Lexington, KY 40546-0099
c/o Dr. David Powell, 606-257-2756

American Horse Council Study:

The American Horse Council (AHC) sponsored a national enumeration and economic impact study in 1985 conducted by The Policy Economic Group at a cost of \$250,000. The national number of horses was estimated at 5.2 million. A nationwide estimate of the economic impact of the U.S. horse industry in terms of horse-related expenditures and racing income was 15 billion dollars annually. The estimated value of other livestock industries based on the USDA, Agriculture Statistics in 1991 was: the national swine industry 11 billion dollars, the dairy industry 18 billion dollars, the cattle/calf industry 30.5 billion dollars, and the poultry broiler industry 8.3 billion dollars.

Advantages.

Advantages of this data source are that it provides one of the few national estimates of the horse population including horse breeds and an economic impact study and provides State estimates for States which have not performed independent studies.

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Limitations. Limitations of this data source are that the study has only been performed once due to the high cost, thus trends over time are unavailable, and the study was an estimate rather than a true census.

Source. American Horse Council
1700 K. Street, NW, #300
Washington, D.C. 20006
The Economic Impact of U.S. Horse Industry
Cost \$75.00, 202-296-4031

American Veterinary Medical Association Study:

The American Veterinary Medical Association (AVMA) conducted studies in 1987 and 1991 to estimate the number of horses in households on a regional and national basis. In 1987 the national estimate of the number of horses was 6.6 million, and in 1991 it was 4.9 million. This report does contain an estimate of the number of horses per household and a profile (life stage, household income, type of residence, home ownership, size of household, head of household education) of the horse-owning household. The report also contains information on the expenditures for horse feed and veterinary care. This report indicated that households were owning older horses when data from 1987 were compared to that for 1991. The percentage of households owning horses less than 1 year of age declined from 12.6% in 1987 to 8.6% in 1991. The percentage of horses over 6 years old increased from 54.6% in 1987 to 64.9% in 1991. The AVMA study provided no published State-level data.

Advantages. Advantages of this data source include: estimates of number and type of horses owned by households, descriptions of the horse owner are available and the study allowed comparison over time as it has been repeated.

Limitations. Limitations are that this data source does not enumerate horses on farms or in boarding or racing facilities and no individual State data have been published.

Source. American Veterinary Medical Association
Center for Information Management
1931 North Meacham Road, Suite 100
Schaumburg, IL 60173
U.S. Pet Ownership and Demographics Sourcebook
Cost \$40.00
c/o Karl Wise, 708-925-8070, Ext. 297
E-mail address: 74232.1370@compuserve.com

1992 Census of Agriculture:

The Agricultural Census, which is performed every 5 years, enumerates horses, ponies, mules, burros and donkeys which reside on "farms". "Farm" is defined as any premises which sells or potentially could sell at least \$1,000 in agricultural products per year. The list of "farms" is generated primarily from tax returns which indicate the premises is a farm. The number of horses is enumerated on the county, State and national level. Estimates of the number of horses and ponies on farms on a national level by the agricultural census were 2.46 million in 1987 and 2.05 million in 1992. There were 67,692 mules, burros and donkeys on farms in 1987 and 56,620 in 1992. These national equine numbers were less than the AHC and AVMA estimates because the horses on race tracks, boarding facilities or households were not included. The only economic estimate performed by the Agricultural Census is the actual value of horses, ponies, mules, burros and donkeys sold from the farm, which was \$833,646,000 for horses and ponies in 1987 and was \$647,311,000 in 1992. For mules, burros and donkeys, the value of sold animals was \$2,245,000 in 1987 and \$2,614,000 in 1992.

- Advantages.** Advantages of this data source include accurate enumeration of horses on farms and possible comparisons over time.
- Limitations.** Limitations of this data source include only horses on farms are included in the survey and only the value of horses, ponies, mules, burros and donkeys sold are requested in the survey.
- Source.** 1992 Census of Agriculture
Agriculture and Financial Statistics Division
Bureau of the Census
Economics and Statistics Administration
U.S. Department of Commerce
Washington, D.C. 20233
c/o Linda J. Hutton, Chief, Commodity Branch
301-763-8569 OR 1-800-523-3215
- Overall advantages.** When considering the enumeration and economic impact studies as a whole, advantages of these data sources include: describe the horse population in the State and nation, provides a list frame for future health monitoring programs, establish the importance of the equine industry from an economic standpoint (national and regional).
- Overall limitations.** Limitations are the lack of correlation between various estimates of the equine population due to variation in target population, survey design,

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list frame development and follow up of non-responders; questionable reliability of using the horse owner's estimate to establish the value of a horse rather than the actual selling price of the horse in economic estimates; lack of enumeration and economic impact studies in many States prevents comparison between States; the limited frequency with which enumeration and economic impact studies have been performed makes comparisons over time or between regions difficult.

Source.

Economic impact review prepared by Dr. Ann Seitzinger, Agricultural Economist.
USDA:APHIS:VS, Centers for Epidemiology and Animal Health (CEAH).
555 S. Howes Street, Suite 200
Fort Collins, CO 80521
970-490-7800

2. Veterinary Teaching Hospitals.

There were a total of 26 accredited Colleges of Veterinary Medicine in the United States in 1994. These colleges have a wide geographic distribution, and the majority have sophisticated diagnostic capabilities. Thus data bases of diagnoses from individual colleges or from a collection of data from many of these colleges could serve as sources of disease information on horses. The veterinary literature contains multiple publications based on prospective and retrospective studies of specific equine diseases based on case material from individual teaching hospitals or multi-center-based surveys of veterinary teaching hospital cases.

Veterinary Medical Data Base (VMDB, formerly VMDP) is a central record keeping system to which over 24 colleges have contributed at some time. Colleges have contributed to the data base for variable amounts of time and not all are contributing currently. Only eight colleges contributed data for 1994, and the data are not complete for all of these eight colleges. The eight colleges which have contributed data in 1994 are located in AL, CO, GA, IN, IL, MI, TN and TX. The earliest contributed records date back to 1964. The data base was initially located at Cornell University and was begun in 1964 by the National Cancer Institute to compile data on the occurrence of cancer in animals. However, the data base contains information on cases beyond those with cancer. The system was moved to Purdue University in 1988 where it is currently located. There was no change in purpose associated with this change of location. Alan Warble, the current administrator of VMDB, has made it his mission to determine a way to accomplish all search requests in a timely manner. All reporting colleges currently use the same cataloging system, the Standard Nomenclature of Veterinary Diagnoses and Operations (SNVDO), thus lending some degree of standardization to the diagnoses among contributing colleges. There has been discussion regarding utilizing the

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Standard Nomenclature of Medicine (SNOMED) as a coding system (a product of the American College of Veterinary Pathologists). There is no specific date for the change to SNOMED. There are currently 5 million records on animals of many species in the data base at VMDB. The data base can be searched by multiple breakdowns of the data including: age, sex, breed, species, body weight, college contributing data, diagnostic procedure, diagnosis, discharge status (live, died, died with necropsy, euthanatized, euthanatized with necropsy), clinician, or month and year the case was seen. Multiple combinations of categories listed above account for 40 different potential breakdowns of the data (e.g., age and sex). Only animals with a hospital clinic number are included in the data base; thus, animals seen on the farm by ambulatory clinicians would not be included unless the animal was subsequently admitted to the hospital. Searches are conducted by VMDB personnel and can be initiated by contacting VMDB by telephone, FAX, E-mail or U.S. mail. There is a long-range goal to set up a search access through the internet, but the details and timetable for this access have not been determined. There is no charge for searches initiated by contributing colleges. The cost to those outside of contributing colleges begins at \$150.00 and is based on the complexity and time involved in performing the search.

Advantages.

Advantages of veterinary teaching hospital records as a data source include: clinicians at teaching hospitals are in a position to make extensive evaluation of patients and, thus, reliable diagnoses and the wide distribution of the contributing colleges, with many States or regions represented, makes compiled data a potential source of describing geographic differences for specific diseases and comparing case fatality rates for various diseases.

Limitations.

Limitations include: Despite the uniform coding system utilized by contributing colleges, there is still the potential for variation in how the same disease might be described by different clinicians or coded by different medical record staff between contributing colleges or within the same college. Also, teaching hospitals receive primarily referral cases which are usually severely ill animals or those with unusual or uncommon diseases, thus the disease status of the hospital population generally would not represent the general population. To test the usefulness of this data source in determining the mortality rate of horses admitted to a teaching hospital, data were obtained directly from the data base of one of the contributing colleges. These data were analyzed to determine case fatality rate for the overall equine hospital population. Several problems were encountered in evaluating the data, including: research and donated animals were included along with the client animals in the data base, age codes were missing for some animals, inaccuracy in determining the length of hospital stay for some cases admitted prior to 1992, retrieval by the medical records staff

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resulted in inaccuracies in the reported number of cases by breed, age and life status (number of cases was being multiplied by age code to give an erroneously large number of hospital admissions for certain categories), inaccuracy in retrieval of one age code for 1 year despite proper entry of age codes in the original data base. Thus, caution should be used in retrieval and analysis of data from veterinary college medical electronic data bases, especially if one is unfamiliar with the hospital case load and not in a position to validate the data set.

Source.

Source of information on VMDB:

Veterinary Medical Data Base (VMDB)
S. Campus Courts Building A
Purdue University
W. Lafayette, IN 47907
c/o Alan Warble, 317-494-9548
E-mail address: warble@vmdb.vet.purdue.edu

Examples of use of this data source.

Determination of risk of vein thrombosis in hospitalized horses and factors associated positively and negatively with vein thrombosis was performed based on a retrospective study of 68 horses receiving intravenous fluid therapy in a veterinary teaching hospital. Cases were identified by searching the hospital electronic data base for all equine cases which were billed for fluids by the hospital pharmacy over a designated period. Multiple logistic regression was used to evaluate associations while simultaneously adjusting for other variables (risk factors). Three factors were positively associated with vein thrombosis, including locally produced fluids, presence of fever and diarrhea. Two factors were negatively associated with vein thrombosis, having general anesthesia or surgery. One continuous variable, duration of intravenous treatment, was positively associated with vein thrombosis. Like all retrospective studies, this study has limitations to the conclusions which can be made; however, the strong association between factors listed above and vein thrombosis warrant consideration.

Reference:

Traub-Dargatz JL, Dargatz DA: A Retrospective Study of Vein Thrombosis in Horses Treated with Intravenous Fluids in a Veterinary Teaching Hospital. *J Vet Internal Med*, 8:264-266, 1994.

Risk factors for colic were evaluated in a multicenter case-control study. Data on 100 colic cases and 100 controls admitted between March and November 1991 were collected from each of five veterinary teaching hospitals. Survey data on 406 colic cases and 406 control horses were included in the analysis. A logistic regression model was

used to identify colic risk factors. This study revealed that breeding horses had almost twice the colic risk of pleasure horses. Standardbreds had a significantly lower colic risk compared with Thoroughbreds, whereas Arabian horses were more than twice as likely to be colic cases. Horses cared for on a routine basis by trainers or farm managers had a higher colic risk compared to horses cared for by their owners. Horses that had access to two or three pastures during the month prior to presentation had a lower colic risk when compared with horses with no pasture access. Further studies were recommended to validate the risk factors for colic identified in this study.

Reference:

Reeves MJ, Salman M: Risk Factors for Equine Colic Identified by Means of a Multicenter Case-Control Study. Proceedings Annual Convention AAEP, 39:93-94, 1993.

3. Veterinary Diagnostic Laboratories.

State and university veterinary diagnostic laboratories are a potential source of equine health and disease data. The laboratories have a wide geographic distribution, offer expertise of the laboratory personnel, and offer a wide variety of available health data, including: necropsy results, serology testing, bacteriology, virus isolation, parasitology tests, clinical pathology, toxicology testing, mineral and vitamin analysis, endocrine tests and drug testing. The 1992 Directory of Animal Disease Diagnostic Laboratories (USDA:APHIS:VS, National Veterinary Service Laboratories) listed 122 laboratories as performing equine diagnostic work. All States were represented, and 10 States had three or more diagnostic laboratories listed as performing equine diagnostic laboratory work. There are now 28 veterinary diagnostic laboratories in addition to the National Veterinary Services Laboratories (NVSL) which contribute data to the Veterinary Diagnostic Laboratory Reporting System (VDLRS) and of these, 18 are American Association of Veterinary Laboratory Diagnosticians members. A compilation of these data are printed quarterly in the DxMONITOR Animal Health Report by the USDA:APHIS:VS, Centers for Epidemiology and Animal Health. The VDLRS was initiated by the American Association of Veterinary Laboratory Diagnosticians, Animal Disease Reporting Subcommittee and the United States Animal Health Association, Animal Disease Surveillance and Animal Health Information Systems Committee. Five laboratories initially contributed in 1987. The VDLRS was initiated as a method of collecting, analyzing and reporting animal disease status based on data from diagnostic laboratories. Equine data which are currently reported in the DxMONITOR Animal Health Report include: equine infectious anemia serology (#positive tests/#tests reported annually on a State and national basis), equine viral arteritis (#positive tests/#tests reported quarterly on a State basis) and the equine encephalomyelitis cases

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confirmed by the National Veterinary Services Laboratories (reported annually).

A survey of laboratories contributing to the VDLRS was conducted in August of 1994 to better characterize the type and volume of equine accessions and diseases which the laboratory directors felt were important for quarterly monitoring. Results of this survey were reported in the Winter 1994 DxMONITOR Animal Health Report. The survey revealed that the laboratories perform a wide variety of diagnostic tests on equine accessions with variability in the type of tests provided and volume of tests performed. In October 1994, the same survey was sent to all diagnostic laboratories listed in the Directory of Diagnostic Laboratories as performing equine diagnostic tests and which were not included in the list of laboratories surveyed in Phase I. A summary of the findings of this survey were included in the Spring 1995 DxMONITOR Animal Health Report.

Advantages.

Advantages of this data source are that diagnostic laboratories perform a wide variety of tests on equine accessions; are widely distributed geographically; are in a position to identify emerging disease problems; and 28 laboratories, in addition to NVSL, are already contributing to a central data collection system (VDLRS). With the General Agreement on Trade and Tariffs (GATT) initiative, there is a need to determine the health status of various U.S. regions as regards status for List A (Vesicular stomatitis, African horse sickness) and B (Anthrax, Leptospirosis, Rabies, Contagious equine metritis, Dourine, Equine encephalomyelitis, Equine infectious anaemia, Equine influenza, Equine piroplasmiasis, Equine viral rhinopneumonitis, Glanders, Horse pox, Equine viral arteritis, Mange, Salmonellosis, Venezuelan equine encephalomyelitis, Epizootic lymphangitis, Japanese encephalitis) diseases defined by the Office of International des Epizooties (OIE). Monitoring these data may be one means of identifying the disease status of U.S. regions for purposes of establishing trade regulations.

Limitations.

Limitations of this data source are lack of standardization of tests and recording methods, lack of a link of the medical history with the test results in some laboratories, limited data accessibility in those laboratories which do not maintain electronic data bases, and variable reasons for sample submissions to the laboratories which may bias the interpretation of test or sample prevalence outcomes. Currently, there is no uniform coding system utilized by these laboratories and there is potential for variation in interpretation of test results within and among laboratories. As well, many of the laboratory results are currently reported at the test level, e.g., #test positive/#tests, versus at the animal level. The reason for testing (market animal, transport or showing requirement, showing clinical signs of disease) is not always available,

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and this deficiency obviously could have an impact on interpretation of the data.

Sources.

Source of DxMONITOR Animal Health Report:

USDA:APHIS:VS, CEAH
555 S. Howes Street, Suite 200
Fort Collins, CO 80521-2586
c/o Dr. Marty Smith, DxMONITOR Coordinator,
970-490-7800
E-mail address: DxMONITOR@aphis.usda.gov

Source of Directory of Animal Disease Diagnostic Laboratories:

National Veterinary Services Laboratories (NVSL)
P.O. Box 844
Ames, IA 50010
c/o Secretary, Scientific Services Laboratory,
515-239-8266

4. Renderers.

The inedible rendering process is performed primarily independent of the slaughter plant facility (noncaptive rendering). Some independent rendering is done in a separate unit which is in close proximity to the slaughter plant facility. Approximately 22% of independent renderers belong to the National Renderers Association (personal communication with Dr. Don Franco of the NRA). Typically, the horse, which is processed by the independent renderer, will be picked up on site (farm, race track, home of horse owner) either by a transporter who works for the rendering plant or by an independent contractor. The horse will already be dead when transported to the rendering plant. The reason for death (natural causes or euthanasia) would not routinely be documented by the renderers. No data on the number of equine carcasses processed by independent renderers is currently available, according to Dr. Don Franco of the NRA. The only record kept by the independent renderers is the number of pounds of carcasses processed, not the number or type of carcasses. According to the NRA representative, Dr. Don Franco, no independent renderers in the association rely primarily on equine carcasses as a source of material. Without development of a prospective data collection system to determine the number of equine carcasses processed by independent renderers in the United States, the NRA would not have data on horse carcass numbers at this time.

Members of the NRA do request a "multiple death certificate" when multiple animals (an unusually large number of animals) are dead on a premises. This certificate would include a statement by a veterinarian regarding the cause of death of the animals. The purpose of requesting

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this multiple death certificate is to protect the quality of the rendered product from contamination. The independent renderer would report any concerning information included on a multiple death certificate to the NRA, the NRA would then report this information to the State veterinarian. So in the event of a peracute, highly fatal disease outbreak, renderers could act as sentinels for equine fatalities. According to Dr. Don Franco of the NRA, there has been no such multiple death certificate for horses brought to the attention of the NRA in the past 3 years.

Source.

National Renderers Association
801 N. Fairfax Street, Suite 207
Alexandria, VA 22314
c/o Dr. Don Franco, 703-683-0155
Fax: 703-683-2626

5. Hide Numbers.

In 1974, horse numbers in the U.S. were estimated based on hide numbers distributed by the National Hide Association (Minnoch JK, Minnoch SR: *Hides and Skins* 3rd edition, National Hide Association, Sioux City, IA, 1979). The National Hide Association has been replaced by the U.S. Hide/Skin/Leather Association, and the staff at this organization indicated that horse hide numbers produced in the United States are not currently tracked. Jerry Beiter at the United States Hide/Skin/Leather Association indicated that the estimate of number of hides used in the 1974 report were actually based on the number of horses slaughtered at plants in the United States that year.

United States Hide/Skin/Leather Association
1700 N. Moore Street
Alexandria, VA 22209
c/o Jerry Beiter, 703-841-2400

6. Equine Slaughter Plants.

A total of 13 plants in the United States slaughtered horses for human consumption in 1993, while only eight plants were slaughtering horses in September of 1994. Plants operational in September of 1994 were located in Texas (3), Nebraska (1), Ohio (1), Connecticut (1), Oregon (1) and Illinois (1). A total of 243,585 horses were slaughtered in the U.S. in 1992; a total of 184,320 in 1993; and a total of 109,353 in 1994. The plants varied as to the number of horses slaughtered per month from 236 to 3,646 with a median of 995 for the eight plants slaughtering horses in September 1994. The largest number of horses was slaughtered at one of the Texas plants and at the Nebraska plant. A trained (USDA:FSIS) lay inspector examines all equine carcasses on the kill floor based on an evaluation process determined by the USDA and the European Union (if carcasses are to be exported to the European Union). A veterinarian employed by the USDA is responsible for the antemortem inspection of the horses (a requirement

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of the European Union), verification of the slaughter of equine infectious anemia reactor (test positive) horses shipped specifically for slaughter, determination of humane treatment of all horses while at the slaughter plant, disposition of all equine carcasses and determination of the reason for condemnation based on a standardized coding system. Reason for condemnation is recorded on a standard form used at all of the plants at which horses are slaughtered for human consumption. Whole carcass condemnation per year (1987-1993) ranged from 0.31% to 0.45% of all horses slaughtered. The most common reason for whole carcass condemnation from 1987 to 1993 was the presence of a pigment condition which is primarily attributable to melanosis in grey horses. Other common reasons for condemnation included neoplasia, pneumonia, septicemia, emaciation and injuries. One equine slaughter plant manager indicated that a premium price is paid for horses which are 10 years of age or older, geldings or nonpregnant mares, and of light horse breeding. The carcasses from these animals yield the highest ratio of meat-to-bone and meat of the most desirable type (no marbling). Therefore, there is a selection of horses for slaughter based on age, sex and breed at this particular plant.

One plant which slaughters horses for export to the European Union indicated that a section of each horse's masseter muscle is checked for trichinosis in an on-site laboratory as part of a requirement by the European Union.

The parts of the slaughtered horses which are not used for human consumption are incorporated into pet foods, rendered products, and used for research investigations, while the hides are processed primarily for leather products.

Advantages.

Advantages of this data source are that slaughter condemnation records are readily available and the coding of reason for condemnation is standardized.

Limitations.

Limitations of this data source are the reference population (e.g., what sector of the general horse population do slaughter horses represent, as there appears to be selection of horses based on age, sex and breed and which are ideally disease free) and the fact that primarily non-terminal diseases would be documented from condemnation records. Although there are standardized codes and recording forms for condemnation of carcasses, this does not necessarily assure uniform coding among veterinary inspectors at different plants. Gaining access to the slaughter plants to perform prospective studies may be difficult and would require an invitation from the plant manager.

Source.

Source of information on number of horses slaughtered for human

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consumption and reasons for carcass condemnation.

United States Department of Agriculture
Food Safety and Inspection Service
Federal Meat and Poultry Inspection Program
Washington D.C. 20250
202-205-0248

Example of use of this data source.

A report was given at the American Association of Equine Practitioners meeting in 1994 in which 500 horses at one slaughter plant were examined as part of a prospective study of dental and/or oral disease. The horses' ages ranged from 6 months to 30 years with 80% of the horses identified to have some form of oral pathology or dental disease. This study exemplifies the information available from equine slaughter plants when the non-edible parts are examined in a prospective study design format.

Reference:

Kirkland KD, Marretta SM, Inoue OJ, Baker GJ: Survey of Equine Dental Disease and Associated Oral Pathology Proceedings Annual Convention AAEP 40:119-120, 1994.

7. Private Veterinary Practices.

Equine practitioners are in an ideal position to document the importance of various diseases in the general horse population. There were 3,472 U.S. members of the American Association of Equine Practitioners (AAEP) in December of 1994. All of the States have members of the AAEP practicing in the State. The number per State varies and likely parallels the horse population in the area. There were 1,860 veterinary practitioners which list equine exclusive as their practice type with the American Veterinary Medical Association (AVMA) in the 1995 membership directory; 1,555 listed their practice type as large animal (which would include equine in some instances); and 4,304 listed their practice type as mixed, predominantly large animal. Based on the number of U.S. AAEP members alone, without cross referencing the list of names between the AAEP and the AVMA, it would appear that a large percentage of veterinary practitioners which perform exclusively or predominantly equine work could be included in the AAEP membership. Thus, there are a large number of veterinary practitioners with expertise in equine health care who could serve as potential sources of equine health data.

There is currently no central reporting system for equine diseases by private practitioners except for diseases which are "reportable" for State or federal regulatory purposes. Private practitioners act as sentinels for the detection of "reportable" diseases of the horse such as equine infectious anemia, vesicular stomatitis, viral encephalitis and

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foreign animal diseases. Each State defines the diseases which are "reportable" within the State. The occurrence or suspicion of occurrence of any foreign animal or federally-regulated disease is considered "reportable" to the USDA:APHIS federal Area Veterinarian in Charge (AVIC) in each State.

The number of private equine practitioners who maintain electronic data bases for practice management purposes has been estimated at 68% by the AAEP deputy director and the chairman of the AAEP Computer Utilization Committee. The Computer Utilization Committee of the AAEP recommended that a survey (previously performed in 1990) be repeated to: update the estimate of AAEP members with health records maintained on an electronic data base, determine the type of software program used in practice management, determine the number of veterinary practitioners who are computer literate themselves versus those that delegate record keeping into an electronic data base to the office personnel. The number of different software programs available for practice management has been estimated by several computer practice management software industry representatives to be 25 to 30, with several manufacturers joining and leaving the market each year. In interviews, representatives for three manufacturers of veterinary practice management software felt that equine practitioners do not fully utilize the medical record keeping capability of the software in most instances. They also felt that the practitioners delegated the record keeping to office personnel in many instances, and that practitioners rarely sit down at the keyboard themselves. Based on interviews with seven private equine practitioners in Kentucky and Colorado, if an electronic data base is maintained, the primary use is to track accounts receivable and individual animal health records rather than for tallying the type and number of cases seen. However, some large practices maintain detailed health records as an electronic data base. For example, the data base in one practice has a key word search capability, such as for "colic". However, standardization of disease definition and coding for such diseases do not appear to be the primary focus of most private practice data bases based on these interviews. At least one practice software program has a list of defined disease and diagnostic technique codes established for equine practice, according to the company representative. If standardized codes were used by all software sources, it would lend some standardization to medical health record keeping in the private practice setting.

To utilize private practitioners records as a data source to determine the frequency of disease occurrence, a standardized disease definition and method of coding and recording disease diagnoses would have to be developed and implemented. Most equine practices do not appear to be able to define the exact number of horses cared for by the practice at

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any one time or annually. This situation is due in part to the frequent transport of horses out of and into a practice area and the frequency with which horse owners switch equine health care providers. Thus, establishing incidence rates of disease from this data source would be difficult at this time.

In summary, private veterinary practitioners currently serve a role in detection of emerging disease by notifying their state or federal veterinary office of the occurrence of "reportable" diseases and in discussing changes in occurrence of non-reportable diseases on central networking systems (discussed subsequently as a separate data source).

Advantages.

Advantages of private veterinary practitioners as a data source are that the reference population would represent the general population and the diagnostic expertise of the equine practitioners.

Limitations.

Limitations include: lack of standardization of disease definitions, recording and coding systems; lack of an incentive for private practitioners to provide health data (cost and time of detailed record keeping and data entry); lack of an accurate estimate of the number of horses in any one practice over time (lack of a denominator in determining incidence rates); lack of an electronic data base for medical records in some practices; concern by practitioners regarding practice and client confidentiality.

Sources.

Source of information on the AAEP:

American Association of Equine Practitioners
4075 Iron Works Pike
Lexington, KY 40511
c/o Gary Carpenter or David Foley, 606-233-0147
Membership directory and computer users directory.

Source of information on AVMA membership:

AVMA Membership Directory and Resource Manual
1931 N. Meacham Road, Suite 100
Schaumburg, IL 60173-4360
800-248-2842

Examples of use of this data source.

There is an example in the veterinary literature of equine practitioners' qualitative ranking of the frequency of occurrence of medical problems in the horse. A survey of AAEP members was performed in 1989 to determine which medical problems of adult horses were seen most commonly by practitioners. The survey had a response from 1,149 members for a response rate of 39.1%. Diseases ranked as numbers 1

and 2 were colic and viral respiratory disease, respectively.

Reference:

Traub-Dargatz JL, Salman MD, Voss JL: Medical problems of adult horses, as ranked by equine practitioners. *J Am Vet Med Assoc* 198; 1991; 1745-1747.

There is also an example of estimating incidence of colic based on practice records. This study compared the accuracy of estimation of incidence of colic based on existing practice records to that obtained in a prospective cohort study. In this study, there was good correlation between the prospective cohort study and the record-based study in estimating the incidence of colic in 14 horse herds. The estimate of colic in this study was 0.15 colic cases per horse per year at risk.

Reference:

Uhlinger C. Incidence of colic in the field: A method to use practice records to estimate disease incidence and assess risk factors. *Proceedings Annual Convention AAEP*; 39: 95, 1993.

8. Horse Farms.

Horse farm records potentially could serve as an ideal source for data regarding the health status of the general population of horses managed on farms. However, there is no current standardization of disease definition, recording or coding of diseases at the farm level unless prospective studies have been initiated. The number of horse farms which maintain electronic data bases is unknown. The Jockey Club, the breed registry for Thoroughbreds, markets a farm record keeping software program. Multiple farms in the Lexington, Kentucky, area utilize this software in maintaining records on horses for both accounting and health recording purposes. The record keeping personnel on four different farms in Kentucky utilizing The Jockey Club program were interviewed in the spring of 1994. There was no uniform coding system for diseases among the farms, and two farms did not code specific diseases at all. The program was utilized primarily for accounting purposes and to maintain individual horse health records. None of the farms had utilized the record keeping system to perform annual tallies of various diseases of horses on the farm. The Jockey Club's goal was to develop and provide the software program to the farms, and the organization has no plan to collate or evaluate the farm data.

There are many other farm management software programs on the market. This software industry appears to be dynamic with suppliers and software programs entering and leaving the marketplace. There are organizations which specialize in training farm personnel in the use of

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various equine data base software programs.

Advantages.

Advantages of this data source are the reference population and the excellent health records which many farms already maintain.

Limitations.

Limitations of this data source include: the lack of existing standardization of disease definition and recording methods for health records, varying levels of existing record keeping, farm owners and managers concerns about confidentiality in reporting of health data, the time it would take to standardize record keeping and reporting of health data in a central data collection area. The cost in time for prospective studies is high for both the farm personnel who record the health data and the researchers who coordinate these studies. Most of the prospective studies have focused on monitoring health of horses or foals within one State or region, thus the reference population is limited to a State or region.

Examples of use of this data source.

Evaluation (by the writer of this report) of existing hard copy foal health records from a large farm in the southeastern region of the U.S. allowed determination of yearly (1986-1993) trends in the occurrence of respiratory disease. There appeared to be a higher percentage of foals which required treatment for respiratory disease during the years of drought conditions, when hotter and drier environmental conditions were present.

There are examples in the veterinary literature of the use of farm-level health data from foals collected as part of prospective studies. The first study was initiated through AAEP members with data collected at the farm level. Data for this study were collected with the cooperation of both horse farm owners and veterinary practitioners. Record keeping was based on predefined health and management codes. Factors which were associated with disease occurrence were assessed in this study. In the first reference, data from 2,468 foals at 167 Texas farms were provided over a 12-month period. The overall foal mortality rate was 4.7%, with pneumonia being the most common cause of death followed by septicemia. The daily risk of death was greatest during the first 7 days of life; 43 of 2,468 foals died in this time period (probability of death per 1,000 days during 0 to 7 days of age was 2.41). The daily risk of death decreased with age. Pneumonia was the most commonly reported cause of death followed by septicemia. The crude incident morbidity for the 12 months was 27.4% with respiratory disease being the most common incident disease, followed by diarrhea. Risk of disease was greatest in foals less than 7 days of age and decreased with age. Diarrhea, septicemia and musculoskeletal deformities were the principal causes of disease among foals less than 7 days old. Diarrhea, pneumonia and septicemia were the principal causes of disease among foals 8 to 31 days old. Among foals aged 32

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to 180 days, pneumonia was the most common cause of death. Foals born on pasture compared to those born in stalls had a significantly lower crude incident rate of diarrhea. Use of the assessment of passive immunity was associated with decreased morbidity from septicemia and pneumonia in this study.

In the second reference, a prospective study of 297 foals on 15 farms was conducted to monitor for the occurrence of diarrhea. Records were maintained by farm personnel based on a predefined coding system for the occurrence and severity of diarrhea in foals. Approximately one-half of the foals developed diarrhea (144/297); foals which developed diarrhea did so most frequently between the ages of 1 and 14 days. Analysis of survey data revealed an association between disinfection of foaling stalls and a lower occurrence of diarrhea in foals. The practice of wrapping the mare's tail at foaling and washing her udder prior to the foal nursing was associated with a lower occurrence of foal diarrhea. Use of shavings in foaling stalls was associated with a higher occurrence of foal diarrhea. Administration of prophylactic antibiotics to foals was associated with a higher occurrence of diarrhea. A larger percentage of foals born to visiting mares when compared to those born to resident mares developed diarrhea. Thus, from this study, it would appear that basic cleanliness at foaling and the mare residing on the farm on which she foaled were associated with reduced occurrence of foal diarrhea.

References:

Cohen ND: Causes of and farm management factors associated with disease and death in foals. *J Am Vet Med Assoc*; 204; 1994; 1644-1651.

Traub-Dargatz JL, Gay CC, Everman JF, et. al.: Epidemiological survey of diarrhea in foals. *J Am Vet Med Assoc*; 192; 1988; 1553-1556.

A limited number of prospective studies designed to monitor the occurrence of specific diseases of horses of all ages have been performed. Examples include the Michigan Equine Monitoring Systems (MEMS), Phases II and III, and a study of colic on horse farms in Virginia and Maryland.

In the MEMS Phase II survey, the health of 1,921 horses on 62 operations was monitored for 1 year (February 1992 to January 1993). Most of the horse operations in this survey were diverse as regards use of the horses, with pleasure being the most common activity. The average age of horses in the study was 8.7 years, and the most common breed was the Quarter Horse. Multiple evaluations were completed on

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the data collected, including: horse days at risk, monthly incidence rates by disease, overall and disease-specific mortality rates, average value of horses, costs of disease and performance time lost. Lameness was the most common disease problem (annual incidence rate 19.6%), while the incidence of colic was 3.5% and incidence of all other gastrointestinal problems (exclusive of colic) was 1.6%. Treatment of gastrointestinal problems was most expensive on a per case basis followed by foot problems. The overall mortality rate of horses in this survey was 2.2% with the highest mortality rate for colic (0.6%). The case fatality rate for colic was 16.3%, third only to unexplained death and old age which both had a case fatality rate of 100%. The highest financial mortality loss was for colic. The summary data in the Phase II report were used in developing in-depth studies of potential associations between specific environmental and management risk factors and the occurrence of disease for Phase III. The MEMS Phase II report is currently available, and the Phase III report is being prepared (1995).

The MEMS program was made possible through a cooperative effort of the horse industry, the Michigan Farm Bureau and Horse Council, the State equine practitioners, Michigan State University personnel, the State veterinarians personnel and the USDA:APHIS:VS Area Office personnel. The MEMS group has experience in the implementation of an equine health monitoring program on a State basis. Thus, this program could serve as a model for equine health monitoring on a national basis. Forms were developed for the collection of information on farm management practices and individual horse health. Multiple data collectors were involved with visits to horse operations on a monthly basis for 1 year each for Phases II and III. These data collectors were from the Michigan State University, Michigan Department of Agriculture, State veterinarian's office, the USDA:APHIS:VS AVIC's office and a private veterinary practice. The impetus for this program came from the State horse industry and has hinged on substantial ongoing support from the industry.

Source of MEMS reports and information on the program:

Michigan Equine Monitoring Systems: Phases II and III
Population Medicine Center
A109 Veterinary Medical Center
Michigan State University
East Lansing, MI 48824-1314
c/o Dr. John B. Kaneene, 517-353-5941

or

Michigan Department of Agriculture,
Animal Industry Division
P.O. Box 30017
Lansing, MI 48909

c/o Dr. Michael Chaddock (Phases II and III), 517-373-1077

The colic risk assessment study performed by Virginia-Maryland Regional College of Veterinary Medicine monitored 1,433 horses (contributing 987 horse years) on 31 farms during 1 year. The colic incidence in this study was 10.4% (104 cases), and horses with repeat colic were included in the 104 cases. Several risk factors of colic were reported and included: age 2 to 10 years, horses used for racing and eventing when compared to those used for other purposes, horses stalled more than 12 hours per day, horses on farms less than 4 years, horses fed orchard grass hay, horses receiving a higher than average intake of digestible energy and dry matter from grain and horses bedded on sawdust.

Reference:

White NA, Tinker MK, Lessard P, Thatcher CD, et. al. Equine Colic Risk Assessment on Horse Farms: A Prospective Study. Proceedings Annual Convention AAEP, 39:97, 1993.

9. Race Tracks.

The race horse population is well defined compared to the general equine population. Horses involved in racing are tattooed as a permanent means of identification. The horse's race performance is maintained as part of a data base which is summarized and printed in the racing newspapers and race course programs each day the horse races. The number and location of race tracks are available from the racing commission in each State that has horse racing. The number, age and sex of horses at each race meet along with the number of race starts would be available from The Jockey Club for Thoroughbred race horses. For other breeds of race horses, this information could be compiled by the racing secretary of each race meet. Currently the recording of this information by the racing secretary is variable and for some meets only the number of horses racing by breed maybe available. At each meet, the individual horse's registration papers are on file with the racing secretary (while the horse is racing at the meet). These registration papers contain the horse's age, sex and breed; however, this information is not currently being routinely or uniformly recorded by the racing secretary or racing commission.

The racing industry is very much in the public eye with national television coverage of many of the major races such as the Kentucky Derby, Preakness, Belmont and Breeder's Cup. Breakdown injuries have occurred during televised coverage of these major races and have necessitated the humane destruction of top equine athletes. The racing industry has developed a heightened awareness of the need for research into ways to prevent or reduce the occurrence of catastrophic injuries. There are several ongoing research projects focusing on the reasons for injury to race horses. One national study of breakdown injuries of race

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horses was initiated by the American Association of Equine Practitioners (AAEP) and the Racing Commissioners International (RCI). (The Thoroughbred Racing Association (TRA) and the American Quarter Horse Association Racing Council became involved in the study in 1994.) Data for this ongoing national study were collected in 1992, 1993 and 1994. Several States including California, Kentucky and Minnesota, have conducted prospective studies of race horse injury and/or cause of death.

These studies vary somewhat in focus, but the primary goal of all of them was to better define reasons for breakdown and/or death of race horses.

Advantages.

Advantages of this data source is the reference population which would represent race horses at the field level, the willingness of racing commission veterinarians to cooperate in data collection, and compilation and analysis of data on breakdown injuries. Determination of the cause of such injuries would begin to address the concern of the general public regarding the welfare of race horses.

Limitations.

Limitations include: despite a uniform recording system of breakdown injuries for the national study, there is bound to be variation in interpretation of injury type between veterinarians at different race tracks; lack of consistent funding for further analysis of the national study data; participation in the national study is voluntary with no monetary reimbursement for time spent in data recording; and breakdown injury has been the primary focus of most of the studies (except for the California study) leaving other diseases of the race horse unexplored.

Examples of use of this data source.

A national study of breakdown injuries in race horses is being coordinated by Dr. Julia Wilson at the University of Minnesota and supported by the AAEP, RCI, TRA and the American Quarter Horse Association Racing Council. A report on the preliminary findings from 1992 has been prepared and presented by Dr. Wilson. There were 1,100 injury reports representing 1,039 Thoroughbreds, 58 Quarter Horses, 2 Arabians, and 1 Standardbred from 33 racetracks and 29 different veterinarians from 15 different States. Quarter horses were included in the study, but the majority of usable reports were based on Thoroughbred horses. There were 191,405 racing starts for Thoroughbreds in the data base from 27 race tracks judged to have complete reporting. Cannon bone injuries were the most common fatal injury followed by sesamoid fractures and ankle disarticulation. Further analyses of the 1992 data appeared in the Thoroughbred Times and the Blood Horse. Overall, there were 304 fatal injuries out of 191,405 starts at 27 racetracks for a death rate of 0.159%. There was wide variation in rate of catastrophic injury between tracks ranging

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from 0.478% to 0.042%. The goal of the project is to determine the risk factors for catastrophic injuries in race horses so that the injuries might be reduced or prevented. Over 1,700 reports from 53 racetracks in the U.S. and Canada were submitted in 1994 per Dr. Wilson. The 1993 and 1994 data have not been analyzed due to lack of funding. However, some funding became available late in 1994 per Dr. Wilson, and analysis is underway. The project is continuing in 1995.

Reference and Source:

Wilson JH, Howe SB, Jensen RC, Robinson RA: Injuries sustained during racing at racetracks in the U.S. in 1992. Proceedings Annual Conference of AAEP: 39:267-268, 1993.

Wilson JH, Jensen RC, Robinson RA: Surveillance system for equine racing injuries in the United States. The Kenya Veterinarian, 18(2), 258-260, 1994.

Thoroughbred Times: January 7, 1995, pgs. 10 and 17.

Dr. Julia Wilson
Department of Clinical and Population Sciences
CVM/University of Minnesota
1365 Gorther Avenue
St Paul, MN 55108
612-625-3745 (Office)
612-625-6241 (Fax)

The California Veterinary Diagnostic Laboratory System is performing necropsies on all horses which die on race track premises in California. This project is being supported by the California Horse Racing Board (CHRB). A report is available regarding the outcomes of the postmortem examination program. The report describes that empirical data from the study have shown that the majority of catastrophic fractures of the humerus, scapula and pelvis occur in sites of existing stress fractures. By implementing scintigraphic examination for the evaluation of obscure lameness in horses at Santa Anita racetrack, a total of 68 horses have been diagnosed with stress fractures in these bones in an 8-month period. These horses were treated appropriately and potential catastrophic injury was averted. Multiple presentations at the 1994 AAEP annual convention were based on the CHRB project.

Source:

California Veterinary Diagnostic Laboratories System: Post Mortem Examination Program
School of Veterinary Medicine

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University of California
West Health Sciences Drive
Davis, CA 95616
c/o Dr. James Case
916-752-4408
E-mail address: jimcase@aol.com or jcase@gypsy.ucdavis.edu

Studies of breakdown injuries in Thoroughbred race horses in Kentucky have been conducted under the supervision of the racing commission veterinarian, Dr. George Mundy. The initial study determined the prevalence and factors associated with musculoskeletal injuries in racing Thoroughbreds in Kentucky from January 1, 1992, to May 31, 1993. A total of 35,484 racing starts among 7,649 horses were monitored for the occurrence of musculoskeletal injuries. The overall prevalence of injury was 0.33% with the prevalence of catastrophic injury of 0.14%. There is a case-control study being conducted in Kentucky which was begun in 1994 to define the risk factors for musculoskeletal injuries in racing Thoroughbred horses. Dr. Mundy has formulated a plan for the implementation of a national monitoring and standardized recording system for race horse health called NAT-VET. He has requested support from various racing industry organizations for the development of the program. He has requested assistance from the Grayson-Jockey Club Research Foundation regarding the potential methods for development and implementation of the program. The program's goal is to standardize recording of race horse health information and facilitate data sharing between race tracks nationally.

Reference and Source:

Peloso JG, Mundy GD, Cohen ND: Prevalence of, and factors associated with, musculoskeletal racing injuries of Thoroughbreds. *J Am Vet Med Assoc*; 204:620-626, 1994.

Dr. George Mundy, Kentucky Racing Commission
Kentucky Horse Park
4036 Iron Works Pike
Lexington, KY 40511
606-254-7021 (Office)
606-253-9727 (Fax)

Dr. Julia Wilson indicated that she was compiling mortality data for the Illinois Racing Commission veterinarian, Dr. Ron Jensen. She indicated there were records of all horse deaths that occurred on the Thoroughbred race tracks in Illinois from 1986 to 1992.

Source:

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1365 Gorther Avenue
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**10. State and Federal
Veterinary Offices.**

The State or federal veterinary offices have documentation of the occurrence of equine diseases which have been designated as "reportable" within the State or federally. The equine diseases which are considered "reportable" vary among the States. In most States, the reportable equine diseases include: equine infectious anemia (EIA), equine viral encephalitis, equine viral arteritis, vesicular diseases and foreign animal diseases. The office to which the occurrence of these diseases would be reported by a private practitioner varies by State. The State and federal offices in most States have a well established communication system and jointly decide on the most appropriate agency to investigate each disease occurrence. The State veterinary office in most States would have the sample level prevalence (# positive tests/# of tests performed) of diseases, such as EIA, as well as the number of outbreaks of reportable diseases which were investigated and confirmed.

One State is monitoring diseases of horses which traditionally have not been considered "reportable". The Virginia Department of Agriculture Division of Animal Health and Consumer Services collects information to document disease occurrence in cattle, horses, sheep, goats, poultry and swine and summarizes this information in the VAHMS newsletter each month. The list of "reportable" diseases for equine has been expanded beyond those listed above and includes: botulism, foal diarrhea, equine viral arteritis and Potomac Horse Fever (schedule B diseases). The schedule B diseases are to be reported to the office on a monthly basis while the traditionally "reportable" diseases (schedule A=EIA, equine viral encephalitis, vesicular stomatitis and foreign animal diseases) must be reported within 24 hours. The occurrence of schedule A or B diseases are reported to the State office by private practitioners and diagnostic laboratories in the State as part of requirements for maintaining State licensure. The monthly newsletter which summarizes all reports is sent to the private practitioners and diagnostic laboratories in the State on a monthly basis (current circulation is 400 copies per month). In the December 1994 VAHMS newsletter, reporting was described as "poor", especially from two regions of the State. The number of cases of each disease is reported in the newsletter but not the total number of reporting veterinarians.

The federal veterinary office in each State would have the number of

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suspect foreign animal disease and federally-regulated equine disease (diseases are listed in the code of federal regulations) investigations which have occurred and the number of confirmed cases of reportable disease in each State. Diseases which are listed in the code of federal regulations for 1994 include EIA, Contagious Equine Metritis (CEM) and dourine. The USDA:APHIS:VS Emergency Programs Staff would have a record of the investigation of these diseases in the United States. The horses which test positive for federally-regulated diseases at the four import stations in the United States are tracked by the USDA:APHIS:VS National Center for Import and Export staff and reported to the USDA:APHIS:VS National Animal Health Programs Staff Veterinarian for equine diseases. Equine diseases which impact the export of horses from the U.S. are tracked by the National Center for Import and Export staff. The National Center for Import and Export staff would be a source of information on the number of horses moving in and out of the United States.

There have been cases of vesicular disease of horses investigated in the U.S. by federal veterinarians due to the foreign animal disease implications of this clinical sign. The USDA:APHIS:VS National Animal Health Programs Staff Veterinarian for equine diseases is aware of all investigations which result in confirmation of a foreign animal disease such as piroplasmiasis. A summary of these investigations was reported at the United States Animal Health Association (USAHA) and the American Association of Equine Practitioners (AAEP) infectious disease committee meetings in 1994. Thus, a summary of this information would appear in the minutes for these committee meetings.

Annually, the sample prevalence of EIA on a State basis is collected and summarized by the USDA:APHIS:VS National Animal Health Programs Staff Veterinarian for equine diseases. The data are reported annually at the United States Animal Health Association (USAHA) equine infectious disease committee meeting and in the DxMONITOR Animal Health Report. According to the Staff Veterinarian for equine diseases, there were 16 States which reported horse-level data for EIA testing in 1994, but these data were not presented in the reports at the USAHA, AAEP or in the DxMONITOR as traditionally only sample prevalence data are presented. The sixteen States which reported horse level data in 1994 to the Staff Veterinarian for equine diseases were AL, FL, IL, KS, KY, LA, MN, NC, ND, NV, TN, TX, UT, VA, WI and WV. Laboratories which perform official tests for EIA must meet several criteria including training prescribed by the National Veterinary Services Laboratories (NVSL), follow standard test protocol prescribed by NVSL, and meet check proficiency prescribed by NVSL. A list of the approved laboratories for EIA testing is available from NVSL.

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Each year, the number of confirmed cases of equine viral encephalitis per State is reported by NVSL in the DxMONITOR Animal Health Report. The number of equine viral arteritis (EVA) serum samples for which the titer was greater than 1:4 or virus isolation was positive as well as the total number of tests for EVA performed by VDLRS contributing laboratories is reported quarterly in the DxMONITOR Animal Health Report.

Advantages.

An advantage of these data sources is that investigations which result in confirmation of a reportable disease would be available at the State and national level. Sample or test-level prevalence of certain diseases such as EIA are collected and reported on a State and national level.

Limitations.

Limitations include: for EIA and EVA only sample level data may be reported by many States and only a very limited number of equine diseases are monitored on a State (varies by State but generally includes EIA, EVA, vesicular diseases and foreign animal diseases) or federal level (listed in the code of federal regulations as EIA, CEM, dourine and any foreign animal disease).

Sources.

Source of information.

Virginia Animal Health Monitoring System (VAHMS):
Division of Animal Health
Virginia Dept. of Agriculture and Consumer Services
P.O. Box 1163
Richmond, VA 23209
c/o Mr. Tom Lees or Dr. Leslie Black, 804-786-2481
Fax: 804-371-2380

United States Department of Agriculture
Animal and Plant Health Inspection Service
Veterinary Services
National Animal Health Programs
Staff Veterinarian for equine diseases
4700 River Road
Riverdale, MD 20737
Fax: 301-734-6465

United States Department of Agriculture
and Plant Health Inspection Service
National Center for Import and Export
4700 River Road
Riverdale, MD 20737

USDA:APHIS:VS
Emergency Programs Staff

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Chief Staff Veterinarian
4700 River Road
Riverdale, MD 20737

Code of Federal Regulations, 1994
Animal and Animal Products
Title 9 part 74 and 75 Communicable diseases in horses, asses, ponies,
mules and zebras, pgs. 157-162.
Title 9 part 11 Horse protection regulation, pgs. 85-102.
Title 9 part 91 Inspection of livestock for exportation, pgs. 235-250.
Title 9 part 92 Importation of certain animals, pgs. 251-323.
U.S. Government Printing Office
Superintendent of Documents, Mail stop:SSOP
Washington, DC 20402-9328

United States Animal Health Association Proceedings
P.O. Box K227
Suite 203, 8100 Three Chopt Road
Richmond, VA 23288
804-285-3210
Fax: 804-285-3367

DxMONITOR Animal Health Report
USDA:APHIS:VS, CEAH
555 S. Howes Street, Suite 200
Fort Collins, CO 80521-2586
Dr. Marty Smith, DxMONITOR Coordinator, 970-490-7800
E-mail address: DxMONITOR@aphis.usda.gov

Source of approved laboratories for EIA testing:

National Veterinary Services Laboratories (NVSL)
Diagnostic Virology Laboratory
P.O. Box 844
Ames, IA 50010
c/o Dr. James Pearson or Dr. Arnold Alstad,
515-239-8551

11. Breed Registries.

Horses are generally registered to maintain records of lineage. Although many horses in the United States are registered as purebred, approximately 16% of all horses in the United States were listed as non-purebred in the American Horse Council survey performed in 1985. Non-purebred horses represented 844,000 of the 5,255,000 horses estimated in this survey. The American Horse Council Industry Directory for 1994 listed over 150 registries or associations for horses, ponies, mules and donkeys. The majority of the registries or

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associations are based on the breed of the horse, while a few are based on the use (e.g., American Performance Horse Association) or age of the horse (Older Horse Registry). The American Horse Council Industry Directory lists the total number of horses registered in each breed or registry and the number newly registered per year for most of the listed registries. Examples of the number of horses in a few breed registries include:

- ◆ a total of 3,240,749 registered Quarter Horses with 102,892 newly registered horses in 1992
- ◆ a total of 485,060 registered Arabian horses with 12,544 newly registered in 1992
- ◆ a total of 221,291 registered American Saddlebred horses with 3,048 newly registered in 1992
- ◆ a total of 526,112 registered Appaloosas with 10,033 newly registered in 1992
- ◆ a total of 234,345 registered Paints with 22,396 newly registered horses in 1992

This directory also has the address, phone number and contact person listed for each of the registries and associations. Many of the individual registries have data on the number of horses and horse owners in the registry by State. The Jockey Club maintains records of the number of thoroughbred foals registered per year, the number of thoroughbred mares bred and stallions standing at stud and the number of Thoroughbreds racing, but does not have total number of Thoroughbreds by State.

Very limited health data are collected by individual breed registries. The Jockey Club Factbook contains information on overall fertility rates of Thoroughbred mares. The Quarter Horse Association conducted a survey of its members, and some health-related questions were contained in the questionnaire. Results are available from the association. Several of the registries or associations have publications which contain articles on health-related topics of particular interest to the members, and some interchange of health-related information occurs among members in this manner. The breed registries would also be a potential source of information on horse lineage. This information would be of value in studying the genetics of specific diseases.

Advantages.

Advantages of this data source include: most registries would have horse inventories on a State basis, and thus, would be a source of information on the number of registered horses by State. The names and addresses of horse owners would help in building a list frame of horse owners when a State equine enumeration study is undertaken. The registries could act as advocates or assist in surveying their members about equine health. The registries could act as a source of

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lineage information.

Limitations.

Limitations include: limited health data are available from this source, the horse inventory is based primarily on births with death of registered horses not consistently reported to the registry by horse owners, need or concern regarding confidentiality of releasing information on horse owners and individual horse's lineage.

Sources.

Source of a mailing list of horse registries:

The American Horse Council
Horse Industry Directory
1700 K Street, N.W., Suite 300
Washington, D.C. 20006-3805
Cost \$20.00 for nonmembers

Most individual registries can provide information on the number of horses and horse owners by State. A select few are listed here as examples:

Arabian Horse Registry of America
12000 Zuni Street
Westminster, CO 80234-2300
c/o Ralph Clark, 303-450-4748

Appaloosa Horse Club
P.O. Box 8403
Moscow, ID 83843-0903
c/o Roger Klamfoth, 208-882-5578

American Paint Horse Association
P.O. Box 961023
Fort Worth, TX 76161-0023
c/o Ed Roberts, 817-439-3400

American Quarter Horse Association
P.O. Box 200
Amarillo, TX 79168-0001
c/o Bill Brewer, 806-376-4888

American Saddlebred Horse Association
4093 Iron Works Pike
Lexington, KY 40511-8434
c/o Patricia Nichols, 606-259-2742

The Jockey Club (Thoroughbred)
821 Corporate Drive

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Lexington, KY 40503-2794
c/o Roger Shook, 606-224-2700

**Example of use of this
data source.**

Data from The Jockey Club were utilized to study the effect of stallion book size, age of mare and age of stallion on live foal percentage for the 1987 and 1988 breeding seasons. There were 17,260 stallions bred to 179,009 mares, with a resulting overall live foaling rate of 58.1%. There was an increase in the live foal percentage as book size increased and a decrease in live foal percentage as mare age increased. Stallion age had no effect on live foal percentage.

Reference:

McDowell KJ, Powell DG, Baker CB: Effect of book size and age of mare and stallion on foaling rates in thoroughbred horses. *J Eq Vet Sci* 12(6), pp. 364-367, 1992.

**12. Wild Horse and
Burro National
Program.**

On December 15, 1971, legislation was passed to protect, manage and control wild horses and burros on public land in the western United States. The Bureau of Land Management (BLM) and the Forest Service were charged with administering the law. Amendments of the Act in 1976 and 1978 addressed problems created by the growing populations and the need to dispose of animals being removed. There are currently 34 million acres of public land in Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah and Wyoming on which wild horses and burros roam. The BLM conducts a census of the 196 herd management areas every 3 years in the late summer and fall after the completion of the foaling season. The census methods are based on research published by the National Academy of Sciences. The census operations in 1993 identified a population (all in the western U.S.) consisting of 26,500 wild horses and burros. The annual population growth in these herds is dependant on range and environmental conditions and varies from 5 to 25% with a long-term average of 15%. The BLM's land use planning process and evaluation of current inventory and monitoring data are used to determine the correct population level for maintaining the ecologic balance and proper number of wildlife populations and livestock use within each herd management area. The BLM, since 1973 and as of 1994, had placed a total of 122,627 animals in private care in the Adopt-A-Horse program. Currently, selective removal of younger animals is being used to reduce the growth rate in the wild horse population. The BLM is supporting research in immunocontraception for controlling wild horse population growth. Public interest and scrutiny of the program are high. The impact of drought and extreme winter weather conditions on the wild horse population draws media attention and public demand for increased monitoring and protection of the herds.

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Advantages.

Advantages of this source: could provide information on the natural reproductive efficiency of horses and the impact of environmental factors and success of management to control herd size. The horses in these herds could also serve as a source of information on the natural behavior of undomesticated horses. These horses could also serve as a source of sera when information on a population of primarily non-vaccinated animals is desired. These horses could also act as controls for certain diseases which may vary between wild and domestic horses.

Limitations.

Limitations of this data source include: limited reference population which is unlike the majority of horses in the U.S., the study of these horses for any purpose would have to be approved by the BLM and public scrutiny of any research conducted on these horses would be high.

Sources.

Bureau of Land Management
United States Department of the Interior
Wild Horse and Burro National Program Office
P.O. Box 12000
Reno, NV 89520

Dawson B: Bureau of Land Management Administration of the Wild Free-Roaming Horse and Burro Act. Proceedings of Annual Convention of AAEP, 40:73-74, 1994.

13. Equine Insurance Companies.

Horse owners can insure against loss due to death or illness of a horse. There are multiple types of equine policies which can insure against loss due to death, theft, loss of the horse's ability to perform a specific use, loss of a pregnancy and cost of medical or surgical care. Each horse must be reinsured annually, and a physical examination by a licensed veterinarian is required as part of this annual renewal process. If an insured horse dies, the insurance company generally requires that a veterinarian examine the horse to determine the cause of death. Actuary data from equine insurance companies could provide estimates for annual mortality and reason for death of insured horses if the total number of horses which were insured and the total number of insured horses which died were available from the company records. The proportion of the total horse population which is insured is not known, but several representatives in the equine insurance industry estimated that approximately 10% of all horses in the United States are insured. There are many insurance adjustors and agents, but only a limited number of companies which insure horses in the United States, and the market is a competitive and changing one per the chairman of the AAEP insurance committee.

Five companies which insure horses in the United States were

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contacted. Most of the company representatives were reluctant to share actuary data due to concerns about confidentiality and, in the case of one company, a concern about antitrust infringement. Three of the companies eventually were willing to share actuary or loss data. Of these three companies, only one was willing or able to determine how many horses were insured with the company. The difficulty in determining number of horses insured, according to one company representative, was that the data base was maintained on a policy versus a horse basis. Thus, more than one horse could be on the same policy or one horse with many shareholders may account for multiple policies. Among the three companies, there was not a consistent method for coding the reason for the claims. The six diagnosis categories which were shared by all three companies included: colic, fractures, respiratory disease, wobbler disease, laminitis and lightning strike. The most common reason for loss claims for all three companies was colic which represented 19.6% of the total claims. The claims were not necessarily for mortality loss but could have been for medical or surgical claims as well, with only one of the three companies confirming the reason for loss as mortality only. When asked if development of a list of disease or cause definitions for death would assist the companies in categorizing their losses and identifying disease trends, one representative indicated that the company would be unwilling to change their coding even if a new system allowed better disease definition and consistent coding between companies.

Prior to compiling these data and to answer the concerns regarding antitrust law infractions raised by the one insurance company representative, the insurance commission office in Colorado was contacted. To determine if compiling the above described data would be an infringement of the antitrust laws, a detailed description of the project was provided to the Insurance Commission Public Affairs Director, Jake Gaffigan. He indicated that the sharing of loss data, per our request of the companies, was not an infringement of the antitrust laws. He also indicated that the McCarran-Ferguson Act implies that small to medium-sized insurers would be considered exempt from antitrust actions. This information did not allay the concern of the insurance company representative who originally raised the issue, and he was still unwilling to share any information. The Insurance Commission representative suggested calling the Insurance Services Office in New York which compiles loss data from various sectors of the insurance industry to determine if there were records for equine loss data. This office was contacted in January 1995, and no equine loss data are compiled or maintained by this office.

Advantages.

Advantages of this data source would include the ability to determine mortality rates and reason for death of at least one sector of the horse population from existing data if companies would provide the numbers

of horses that are insured and that died per year and used standard coding for cause of death of the horse.

Limitations.

Limitations include: unwillingness of some insurers to share loss data, concerns by insurance companies regarding confidentiality and antitrust infringements, variable and limited categories for coding of cause of death by the companies, and lack of available data on total number of horses insured by some companies.

**14. Central
Information or
Networking
Systems.**

There are multiple veterinary networking systems to which equine veterinary practitioners and/or clinicians have access. Examples include: the Network of Animal Health (NOAH) based at the American Veterinary Medical Association offices in Schaumburg, IL; Veterinary Information Network (VIN) which is based in Davis, CA; and EC-NET which is based at Washington State University. The NOAH and VIN are vendors selling on-line information systems to veterinary practitioners. Based on the minutes of the 1994 AAEP computer application committee meeting, NOAH and VIN both offer important potential benefits to the AAEP membership, but the committee did not feel it appropriate for the AAEP to endorse any one service over the other and recommended the membership become familiar with these services so they can make a choice. The committee further encouraged the vendors to add appropriate data bases for use by the equine practitioners. These electronic communication systems allow for exchange of information on specific cases or herd problems in a public forum. NOAH and VIN also have multiple other services available, such as searches of the veterinary literature and past exchanges which have occurred on the network. NOAH and VIN both have equine coordinators or specialists which monitor the equine sections and contribute to the exchange of information on the equine topics. Equine conferences on NOAH entail having multiple experts on-line at a designated time, and all other subscribers to the service can monitor the conference and ask questions or make comments. EC-NET is comprised of approximately 91 users who have an interest in equine health care and is coordinated by Dr. Claude Ragle at Washington State University. Questions or comments are sent via E-mail to Dr. Ragle, and he forwards them on as a group message to all of the users via an E-mail program. Besides the veterinary networks, there is an equine listserv called Equine-L which is primarily an exchange for horse owners, but some health-related topics are occasionally discussed.

The Equine Health Line is a telephone consultation service sponsored by the AAEP and The Grayson-Jockey Club Research Foundation, Inc. (a private research funding agency). The purpose of this service is to act as an information resource which would facilitate veterinarians in the management of difficult or unusual equine cases. This service became available in July 1994 and is available free of charge to

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veterinary practitioners. Dr. Edward Ford, Jr., coordinates the service and is the initial contact for all callers. He determines the nature of the question or problem. Once the nature of the question is determined, Dr. Ford has approximately 20 experts in various fields of equine medicine, surgery, ophthalmology, theriogenology and dermatology which he can call to attempt to provide the needed information. Dr. Ford selected the consultants based on his experiences in 30 years of mixed animal practice and on a list of researchers in various specialties which is maintained by The Grayson-Jockey Club Foundation. The consultants volunteer their services at no charge. Dr. Ford monitors calls on a daily basis. This is not considered an emergency service, and emergency consultation is not provided.

The Grayson-Jockey Club Research Foundation, Inc., also maintains an equine medical research data base. The Foundation has compiled a list of research projects into a computerized system for storing. The data are readily available and frequently updated. The data base in 1994 contained abstracts on 1,848 equine research projects which were either current or recently completed. The projects are listed under 3,153 different titles.

Advantages.

An advantage of this data source is it could allow for the identification of emergence of new diseases, outbreaks of disease and importance of various diseases if there was wide use of the systems and there was a consistent compilation of the results of the networking or Healthline calls.

Limitations.

Limitations include: lack of verification and standardization of diagnoses, has yet to gain wide participation by equine veterinary practitioners, and resource demands would be high to compile the network exchanges.

Sources.

Sources on information on veterinary and equine networks:

NOAH
AVMA Network of Animal Health
Center for Information Management
1931 N. Meacham Road, Suite 100
Schaumburg, IL 60173
c/o Karl Wise or Jim Brewer, 800-248-2862, ext. 297
E-mail address: 74232.63@compuserve.com
Service provided through CompuServe
Cost: \$25.95/month NOAH and CompuServe Basic Services

Veterinary Information Network (VIN)
1411 West Covell Blvd.
Suite 106-131

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Davis, CA 95616
E-mail address: pdp1@aol.com or ducan@aol.com
c/o Dr. Paul Pion or Dr. Ducan Ferguson, 800-700-4636
Service provided through America Online
Cost: \$30.00/month or \$250.00/year for basic services does not include the cost of America Online (AOL) service.

EC-NET
Dr. Claude Ragle
College of Veterinary Medicine
Washington State University
Pullman, WA 99164-6610
509-335-0711
E-mail address: ragle@vetmed.wsu.edu
No fee to be in EC-NET but must have internet access.

Equine-L Listserve
Listserv@psuvm.psu.edu
Select internet listservers
Search for equine
Select Equine-L to receive messages as they are sent or Equine-D to receive messages in a digest form.
No fee for listserv but must have access to internet.

Source of information on the Equine Healthline and Equine Medical Research Database:

Dr. Edward S. Ford, Jr.
Grayson-Jockey Club Research Foundation, Inc.
821 Corporate Drive
Lexington, KY 40503
606-224-2850
No fee for consultation service.

**15. American
Association of
Equine
Practitioners.**

The American Association of Equine Practitioners (AAEP) began in 1954. The mission statement of the AAEP is "To improve the health and welfare of the horse, to further the professional development of its members, and to provide resources and leadership for the benefit of the equine industry." The AAEP had 3,472 members in the United States in December 1994. In addition there were 312 Canadian members, 665 international members, 500 U.S. veterinary student members and 155 Canadian and international student members. The association holds an annual convention each December which was attended by 1,617 members (928 U.S., 123 Canadian, 106 international) in 1994. The central office for the AAEP is in Lexington, KY. The AAEP has a full-time staff including executive and deputy directors. Questions or comments about or to the organization can be made by telephone, U.S.

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mail or E-mail. There are over 30 committees which serve the organization. Minutes from the committee meetings and annual convention are published and circulated to members annually. Several AAEP committees could clarify and/or prioritize health-related issues including the: infectious disease committee, computer utilization committee, ethics committee, racing committee, racing regulatory committee, pediatrics committee, research committee, equine insurance committee, biologics and therapeutics committee and scientific program committee. The infectious disease committee was formed in 1994 to act as a forum for discussion of infectious disease problems and as a means of alerting members of infectious disease outbreaks. The equine diseases Staff Veterinarian for the United States Department of Agriculture Health:Animal and Plant Health Inspection Service:Veterinary Services (USDA:APHIS:VS) National Animal Health Programs will have ongoing interaction with the AAEP infectious disease committee to keep the AAEP membership apprised of infectious disease issues and to consult with committee members regarding infectious disease questions and policies.

The AAEP office has ongoing interaction with the American Horse Council, the equine diseases Staff Veterinarian for the United States Department of Agriculture Health:Animal and Plant Health Inspection Service:Veterinary Services (USDA:APHIS:VS) National Animal Health Programs, and private equine veterinary practitioners in the field. Thus, it could act as a central coordination point for dissemination and collection of equine health information. The AAEP has a monthly newsletter which has a 1.5-month turnaround time for items submitted for inclusion in the newsletter. This newsletter is used to disseminate items of interest to the membership and could potentially be used to solicit information or input from the membership regarding health-related topics.

There have been discussions regarding how to best implement an alert system to reach the AAEP membership in the event of a major equine disease outbreak. A potential format for an action plan was developed as the result of the equine viral arteritis outbreak at Arlington International Race Track in the summer of 1993. This action plan was the joint effort of many groups and was sponsored by the AAEP, Arlington International Racecourse, Fort Dodge Laboratories, Thoroughbred owners and breeders association, and the University of Kentucky Equine Research Foundation. The action plan was developed to act as a guideline for "establishing a national communication network to effectively respond to future disease outbreaks that might occur on racetracks in the United States." The action plan indicates when an outbreak occurs, the racing commission veterinarian should contact the Gluck Equine Research Center. Based on the discussions with personnel at the center, the racing commission veterinarian in

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cooperation with the Gluck Equine Research Center will inform all of the following: the local State and federal veterinarians, the USDA:APHIS:VS National Centers for Import and Export staff veterinarians (Drs. Joyce Bowling and Andrea Morgan), the equine diseases Staff Veterinarian for the United States Department of Agriculture Health:Animal and Plant Health Inspection Service:Veterinary Services (USDA:APHIS:VS) National Animal Health Programs, the American Horse Council (Amy Mann), and the AAEP executive director (Gary Carpenter) and provide response to the media.

Advantages.

An advantage of this data source is that the AAEP is a common contact point between the horse industry through the American Horse Council, private veterinary practitioners and the USDA on a national level.

Limitations.

Limitations are that there is currently no formal recording or reporting system for equine diseases through the AAEP office other than committee meeting minutes, nor is there a common electronic networking system used by all members of the AAEP.

Sources.

Source of information on the AAEP:

American Association of Equine Practitioners
4075 Iron Works Pike
Lexington, KY 40511
606-233-0147 (Office)
606-233-1968 (Fax)
c/o Gary Carpenter, Executive Director
c/o David Foley, Deputy Executive Director
E-mail address: America On-line DLFAAEP@AOL.COM or
Compuserve 74232.213@Compuserve.COM

Source of information on the action plan:

Dr. David Powell
University of Kentucky
Department of Veterinary Sciences
108 Gluck Equine Research Center
Lexington, KY 40546-0099
606-257-2756

16. American Farriers Association.

The American Farriers Association is an international group with chapters in most States. The association began in the 1970's and is a nonprofit organization with an estimated membership of 3,000 in 1995. A directory of members, which includes addresses, is available from the main office. The organization has no estimate of the percentage of the farriers in the U.S. which belong to this organization,

as farriers are not required to be licensed in all States. This group has an annual meeting in February or March which will be attended by approximately 500 people in 1995. There are speaker notes from this meeting. The office is located in close proximity to the AAEP office, and the associations interact regarding development of informational brochures and issues of importance to both associations, etc. The membership directory could aid in development of a horse-owner list frame. Members could identify important issues as regards the horse's hoof or shoeing and could act as a means of disseminating information about horse hoof care to the public.

Source.

American Farriers Association
4059 Iron Works Pike
Lexington, KY 40511
606-233-7411
Fax: 606-296-1970

17. American Horse Council.

The American Horse Council (AHC) is the national legislative representative for the horse industry. The AHC was formed in 1969 and is based in Washington, D.C. The AHC is totally membership supported, with a diverse representation of virtually all facets of the horse industry. The primary role of the AHC is to act as a lobbyist for the horse industry. The AHC has a full-time director for equine health and regulatory affairs. The health-related issues of primary interest to the AHC are those which impact the business aspects of the horse industry, and more specifically, those which affect the movement of horses. Policies for the humane transport of horses to slaughter is a current challenging issue for the AHC. Infectious diseases of interest to the AHC have included EIA, EVA, equine herpesvirus, piroplasmiasis and African Horse Sickness. Thus the diseases and problems which are of interest to the AHC tend to parallel those which are monitored and regulated by the USDA:APHIS:VS, either within the U.S. or based on import-export regulations. There is ongoing communication between the AHC, the USDA:APHIS:VS National Animal Health Programs equine diseases Staff Veterinarian and the National Center for Import and Export staff veterinarians and the American Association of Equine Practitioners committees regarding policies which affect the movement of horses and the welfare of the U.S. horse population.

The AHC publishes a directory annually which contains information on the U.S. horse industry and lists many equine and veterinary groups, including but not limited to, breed registries, veterinary schools, welfare organizations, foreign contacts, pari-mutual race tracks, racing organizations, rodeo organizations, show organizations and transport companies as well as a guide to interstate health requirements. This directory contains information on potential contacts for building of State or national horse owner list frames. The AHC also publishes a

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newsletter bimonthly. The newsletter contains information on current lobby issues and tax bulletins as well as other topics of interest to the membership.

Advantages.

The AHC directory contains lists of horse organizations and groups which would be of value in building a list frame of horse owners and the AHC could act as a source of information on the importance of issues to the horse industry and as part of a specific needs assessment. The AHC is also in close contact with the USDA staff veterinarians and the AAEP and thus would have up-to-date information on many equine diseases and related issues.

Limitations.

The AHC is attempting to represent very diverse equine groups. It focuses primarily on issues which have an impact on the business aspects of the horse industry. Thus, there are many equine health-related issues on which the AHC does not focus, such as colic.

Source.

The American Horse Council
1700 K Street, Suite 300
Washington D. C. 20006-3805
c/o Amy Mann, Director, Health and Regulatory Affairs
202-296-4031
Fax: 202-296-1970

18. Source of this document and contact information.

Copies of this document can be obtained by contacting the following:

Nina Rothenberger
USDA:APHIS:VS, CEAH
555 S. Howes Street, Suite 200
Fort Collins, CO 80521
970-490-7848
E-mail address: nrothenberger@aphis.usda.gov

For questions or comments on this document contact:

Dr. Nora Wineland
USDA:APHIS:VS, CEAH
2150 Centre Ave., Bldg. B, MS 2E7
Fort Collins, CO 80526-8117
970-494-700
Fax: 970-494-7229
E-mail address: nwineland@aphis.usda.gov

Dr. Josie Traub-Dargatz
Colorado State University
College of Veterinary Medicine
and Biomedical Sciences

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Department of Clinical Sciences
300 W. Drake Avenue
Fort Collins, CO 80523
Veterinary Teaching Hospital, 970-491-7101
Fax: 970-491-1275
E-mail address: jtraub@vagus.vth.colostate.edu