

INTEGRATING EPIDEMIOLOGIC RESEARCH AND VETERINARY PRACTICE: PRESENT AND FUTURE

SLATER, M.R.^a, BOOTHE, D.M.^b

In veterinary medicine, much of the epidemiologic research has been motivated and completed by faculties at the veterinary teaching hospitals or other large referral clinics. Using referral patients in studies often does not provide a true picture of the disease frequency and the prognosis because of the special reasons why patients are referred to teaching hospitals. To improve our understanding of disease incidence, prevalence and prognosis, subjects may be recruited from private practices or the community. This idea was espoused and published 15 years ago in a study on cryptorchidism and testicular neoplasia in dogs (Reif et al., 1979). However, only recently has the collaboration of private practitioners with academicians occurred with any frequency in the United States and Canada. In the context of collaborative research between practice and academe, this paper will discuss: 1) the rationale behind research in a private practice setting; 2) the current types of projects at Texas A&M University; 3) suggestions for mechanisms to facilitate and expand collaborative epidemiologic projects and 4) future possibilities.

RATIONALE

The importance of community or practice-based research has already been acknowledged in human medicine (Neaton, 1992; Yarbrow, 1984). Recent social and scientific shifts have encouraged discussion and expansion of epidemiologic research in veterinary medicine. In addition, the involvement of private practitioners, both generalists and specialists, has been considered as a way of examining spontaneously occurring animal disease. Concerns about the use of animals in research, limited funding for veterinary research and the need for information on populations can all be addressed by means of epidemiologic methods. There are several other advantages in private practice research. Involving private practitioners in research can increase sample sizes, speed up recruitment, improve generalizability of results and provide direct transfer of knowledge to veterinarians in the community. Practice-based research also can be used to gain information about clients and patients who would be under-represented in traditional teaching hospital studies and, therefore, to decrease bias. Concerns expressed in human medicine about practice-based research include data quality issues such as completeness, accuracy and follow-up. However, studies which have evaluated these concerns have shown as good or better data quality from the primary practitioners' input as from the research hospital (Neaton, 1992). Practitioners' motivations to participate in epidemiologic research include increased knowledge about their own patient population, access to experimental drugs and procedures, the intellectual challenge and, ultimately, improved patient care through information gained during the research process.

TYPES OF PROJECTS

Different levels of practitioner involvement are possible. The first and most common level is a project where practitioners in the region refer patients for possible entry into a clinical trial or other research project. An example of this type of involvement is a proposed study on vaccine induced sarcomas in cats. In this situation, practitioners identify and provide follow-up care, but have limited responsibilities outside his/her usual patient care. The second level occurs when practitioners are actively involved in data

^a Department of Veterinary Anatomy and Public Health, College of Veterinary Medicine, Texas A&M University, College Station, TX 77843, USA.

^b Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, College Station, TX 77843, USA.

collection, usually through standardized data forms. A study on laminitis in horses involved data collection in seven private practices and the College of Veterinary Medicine using standard data sheets. This type of project requires increased time and effort on the part of the practitioner and usually provides the practitioner with an opportunity for input in the study design. A third level occurs when each practice actively applies a standardized diagnostic or therapeutic protocol. An example of this would be a clinical trial. A study of this type is being conducted on refractory epilepsy in dogs where specific diagnostic and therapeutic regimens are followed. A fourth possible level of interaction occurs when practitioners generate the research proposal with support from faculties at teaching hospitals.

The actual methods for information transfer are varied and depend upon funding, existing resources and participant needs. Methods can include routine mailings, telephone calls or personal visits to retrieve data. Fax machines can be used if available. Computer linkages, either through downloading data and shipping diskettes or through direct connections, are also possible, although this is a complex and usually costly. PetCHAMP, a program developed at the University of Minnesota, is an example of computer-linked practitioner research.

MECHANISMS

Recommendations for successful practice-based research in human medicine have been made. These include: 1) selecting a disease that is common and has serious consequences; 2) using relevant clinical endpoints in the study; 3) choosing a project that receives wide-spread interest among physicians and 4) designing focused, simple data collection forms and procedures (Neaton, 1992; Yarbrow, 1984). These recommendations are equally appropriate for veterinary medicine.

Any principal investigator can initiate research which involves practitioners. However, establishment of a supporting structure may enhance the efficiency of this type of multi-person/center research. Suggested mechanisms for improving efficiency are: 1) information on practitioners who are interested in participating; 2) a database of each investigator's previous experience with specific practitioners or types of projects and 3) feedback mechanisms (such as seminars and newsletters) for all involved individuals. These mechanisms would provide a more formal and organized basis for practitioner input and for developing research questions which are of interest to veterinarians in the field.

Ideally, a technician or other support person would be required to carry out data entry, compose newsletters and provide information to interested individuals. He/she, or an additional person, could also assist in the actual conduct of ongoing studies. Recruitment methods for interested practitioners and clients include: 1) advertisements in journals; 2) direct mailings; 3) newspaper articles and advertisements and 4) announcements at continuing education seminars or other speaking engagements. Seminars can be organized to discuss ongoing projects, including problems, design issues and results, or to present information on epidemiologic methods and statistics to interested private and public practitioners. Interest group meetings can provide a forum for developing ideas and working out study protocols.

FUTURE DIRECTIONS

Data on patients and clients in the private practice setting can provide valuable insight into disease incidence and prevalence, emerging disease problems and long-term outcomes of disease and/or treatment. Private practice research can enhance continuing education, encourage intellectual exchange among veterinarians and improve patient care.

It is important to explicitly evaluate the quality of data collected in private practice or teaching hospitals as has been done in clinical trials in human medicine (Neaton, 1982). In veterinary medicine, discussion of practice-based epidemiologic research should not be limited to clinical trials as is often the case with human medicine. Investigators' experiences with recruitment, completeness of data and accuracy should be formally compiled to help prevent each new individual from re-inventing the wheel. Although certain information may be regionally specific, such as the best way to recruit patients, other information about how to coordinate

projects can be useful in many settings. Some work on managing coordinating centers has been done in human medicine (although mostly concerning clinical trials), but little has been published in veterinary medicine (Kaluzny et al., 1989). Protocols which limit losses to follow-up (an even bigger problem in veterinary medicine than in human medicine), improve owner compliance and standardize the evaluation of subjective clinical signs (such as pain) should be described, examined and published.

Part of the process of facilitating epidemiologic research is the linkage of private practice and institutional practice. Other components which may be included in order to complement epidemiologic research are collaborations with basic and applied scientists, in and outside veterinary colleges. Much information can be gained by the thorough and open-minded study of spontaneously occurring disease in animal populations.

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