Veterinary informatics - international access to MEDLARS via Internet Grateful Med

Pat J Mullen
Veterinary Medicine Library, Oklahoma State University
Stillwater, OK 74078-2013, USA
Phone +1 405 744 6655, Fax +1 405 744 5609, E-mail: pmullen@okway.okstate.edu

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The dissemination, globalization, and access of information over the Internet have expanded rapidly in the past several years. This globalization of information affects all disciplines, especially medically related disciplines. Smith, 1997 estimated that health care accounts for ten percent of the information on the Internet, now referred to as “the largest library in the world.” (1).

Thomas Jefferson, the great American statesman said, “Laws and institutions must go hand-in-hand with the progress of the human mind—as that becomes more developed, more enlightened, as new discoveries are made, institutions must advance also to keep pace with the times.”

Keeping pace with the times is reflected in the National Library of Medicine’s choice of subtitle for Internet Grateful Med: --- in a changing environment.

Pritchard, 1991 discusses the veterinarian’s rapidly changing world. How do veterinarians acquire veterinary related information that makes it possible for them to adapt to a changing environment and to keep pace with the times? (2).

The veterinary researcher is being asked to take responsibility for the continued success of the veterinary profession. Singleton, 1993 referring to the 1989 Pew Report opined, “the future welfare of the veterinary profession will depend more and more upon the quality of the national veterinary research program than any other single factor.” (3, 4).

Veterinarians are being asked to expand their role as a professional health care provider; to think high tech health care. The public is aware of and demanding the same specialized high technology health care for their animals that was reserved for human beings only a few years ago.

Veterinarians are being asked to think globally. Emerging infectious diseases, often zoonotic diseases, are cause for concern in the health care field. Although a recent outbreak of Bovine Spongiform Encephalopathy, a zoonotic disease, was confined primarily to Britain, information about this disease quickly disseminated throughout the world.

Veterinarians are being asked to think about environmental health. What impact does veterinary pharmaceutical and biological residues have on the environment? Do antibiotic, hormone, and anthelmintic residues contaminate our soil, water supply, and the food chain?
The veterinarian is being asked to think about social responsibility, balancing animal rights with biomedical research. Does the veterinarian have a role in reporting animal abuse as a potential intervention to child or domestic abuse? Studies indicate that up to forty-six percent of prisoners incarcerated for homicide admit to cruelty to animals (5). The expanded role of the veterinarian requires expanded access to veterinary and biomedical information. Internet Grateful Med (IGM) provides access to an expanded information base with biomedical bibliographic databases and hyperlinks to global information through the Internet’s digitized library.

Veterinary medical librarians and veterinary researchers search the National Library of Medicine’s (NLM) MEDLINE database. However, NLM’s MEDLARS system, of which MEDLINE is just one of approximately forty bibliographic databases, is more extensive than MEDLINE. MEDLARS includes AIDS, Cancer, Toxicology, Health Care Administration, Health Care Technology, and Bioethics databases, available for end-user searching through Grateful Med formats. Eventually all databases will be available through Internet Grateful Med.

Internet access, in addition to Internet Grateful Med, provides veterinarians the option of searching multiple interdisciplinary databases, access to world wide web sites offering the most current biomedical information, and hyperlinks to veterinary related information sources. These options plus the capability of electronically ordering full-text articles, networking with colleagues, and participating in electronic continuing education courses all at one terminal, make the Internet the ideal “virtual library” for veterinarians and veterinary librarians.

Internet Grateful Med provides the gateway interface to the National Library of Medicine’s MEDLARS biomedical databases for end-user searching. International MEDLARS Centers are the gateway interface to the National Library of Medicine’s information, databases, products, and services for international users.

International MEDLARS Centers (http://www.nlm.nih.gov/pubs/factsheets/intlmedlars.html) are located in twenty-two countries on six continents. Centers are located in Australia, Brazil/Pan American Health Organization, Canada, China, Egypt, France, Germany, Hong Kong, India, Israel, Italy, Japan, Korea, Kuwait, Mexico, Russia, South Africa, Sweden, Switzerland, Taiwan/Intergovernmental Organization, and in the United Kingdom. Each of these unique centers has a bilateral agreement with the National Library of Medicine to provide access to NLM’s databases, information and search training, document delivery services and to collaborate with NLM on specialized projects. These centers also provide extensive links to biomedical resources in their own country and throughout the biomedical world.

The National Library of Medicine’s (NLM) electronic MEDical Literature Analysis Retrieval System, commonly known by its acronym, MEDLARS, has two subsystems: Elhill and Toxnet. Elhill comprises approximately twenty-five biomedical databases, and Toxnet has approximately ten toxicology databases, for a total of approximately forty MEDLARS databases. For more details regarding the databases see the Internet URL: http://www.nlm.nih.gov/pubs/factsheets/online_databases.html
The first Grateful Med product for end-users, a menu driven, microcomputer based interface to MEDLARS was introduced in the DOS format in 1986, followed by the Macintosh in 1990. These floppy disk versions provide access to all forty MEDLARS databases. NLM plans to phase out the two older floppy disk versions of DOS and Macintosh when all of the databases have migrated to the Internet.


Internet Grateful Med provides searching to the full MEDLINE database, the most extensively used of the MEDLARS databases. MEDLINE (MEDlars on-LINE) is NLM's bibliographic on-line interactive database covering the world biomedical literature. MEDLINE files contain over 8.6 million bibliographic citations and abstracts from over 3,800 biomedical journals dating back to 1966. Coverage is worldwide. Forty-nine percent of the indexed journals are published outside the United States. Seventy of the indexed journals are veterinary medical titles, and approximately seventy-five percent of the records have abstracts. For information regarding serials indexed check http://www.nlm.nih.gov/tds/serials/lji.html

In addition to MEDLINE, IGM provides the gateway interface to PREMEDLINE, AIDSLINE, and HealthSTAR. Basic citation information and abstracts are scanned daily into PREMEDLINE. Citations are transferred to MEDLINE when MESH index terms and other indexing information are assigned. AIDSLINE comprises all publications since 1980 on AIDS research, health policy issues, and clinical and social aspects of AIDS. HealthSTAR is the merged Health Planning and Administration with Health Services and Technology Assessment Research databases. HSTAR provides access to clinical and non-clinical topics in health planning, administration and management, quality assurance, and health care technology assessment. The IGM development team has announced several more NLM databases in NLM Technical Bulletin 1997 Jan-Feb; 294, which is also published on the URL: http://www.nlm.nih.gov/pubs/techbull/feb97/feb97_technote.html. AIDSDRUGS, AIDSTRIALS, DILINE, OLDMEDLINE, SDILINE, and HISTLINE will be added in the spring of 1997 to the list of IGM-searchable databases. Bioethicsline and Toxicology databases are scheduled to be added by the fall of 1997, for a total of eleven Internet Grateful Med databases. Cancerline will be added at a later date.

The Internet URL for Internet Grateful Med is http://igm.nlm.nih.gov. A compatible web browser such as Netscape Navigator or Microsoft Explorer 2.0 or higher is recommended. Access to MEDLARS databases via online Internet Grateful Med allows formulation of the search strategy off-line. Context sensitive HELP icons are available to assist the searcher. Assisted searching provides for more accurate retrieval with find related and search analysis functions. Subject query terms are automatically mapped to appropriate MESH (MEdicalSubjectHeading) contained in the new Metathesaurus. This Metathesaurus-rus has the capability to translate in four languages. The user can explore alternative terms in the Metathesaurus that may be used in the search at no charge. The find related feature guides a user to additional terms that may assist the search, and a search analysis function shows the
number of hits from each term entered. After retrieval of the Metathesaurus hit list, the option is available to limit the search by major concept or selected qualifiers. Additional limits are: other years (all or segmented), languages, publication type, study groups (animal or human), and age may be used to further define the search strategy.

A recognition of the critical need for veterinarians to access the most current veterinary related information led to the questions: Is there an advantage of using online searching via Internet Grateful Med? Is online searching the most current way to access veterinary literature? Mehta, 1996 asks, “Are CD-ROMs a thing of the past?” (6).

In order to determine the currency factor, a comparison survey was completed on a list of ten veterinary medical journals. The latest entry in MEDLINE - online Internet Grateful Med was compared to several non-online veterinary literature databases. The ten veterinary medical journals that are published in eight countries are: Australian veterinary journal, Acta veterinaria hungarica, Acta veterinaria scandinavica, British veterinary journal (changed title to Veterinary journal in 1997), Canadian veterinary journal, Journal of the American Veterinary Medical Association, Journal of the South African Veterinary Association, Journal of veterinary medical science, Tierärztliche Praxis, and Veterinary research.

These ten journals were compared for the latest entry (volume and issue) indexed in five separate bibliographic veterinary related databases:
1. NLM’s Internet Grateful Med online MEDLINE
2. NLM’s Medline Silverplatter CD - monthly
3. Commonwealth Agricultural Bureau International’s (CABI) CAB ABstracts Silverplatter CD - quarterly
4. Institute of Scientific Information’s (ISI) Focus On Veterinary Science and Medicine floppy disk - monthly

Database limitations included were:
1. limited to veterinary medical related databases available on Oklahoma State University’s networked public access terminals
2. lacked two important Spectrum Series databases, VETCD and BEASTCD, used extensively by Veterinary Medical Libraries
3. a timeliness factor of the University Computer Systems Department loading current CD’s on the network not controllable.

The five databases were monitored on the 15th of each month for five months, January through May 1997, to determine the latest entry (volume and issue) for each of the ten veterinary medical journals. The following graphs show the results of the currency comparison.
**Graph 1**

*Australian veterinary journal*

![Bar chart showing data for Australian veterinary journal from January to May.](chart1.png)

**Graph 2**

*Acta veterinaria hungarica*

![Bar chart showing data for Acta veterinaria hungarica from January to May.](chart2.png)
Graph 1

**Australian veterinary journal**

Graph 2

**Acta veterinaria hungarica**
Graph 3

Acta veterinaria scandinavica

Graph 4

British veterinary journal
Graph 3

Acta veterinaria scandinavica

Graph 4

British veterinary journal
Graph 5

Canadian veterinary journal

Graph 6

Journal of the American Veterinary Medical Association
Graph 5

Canadian veterinary journal

Graph 6

Journal of the American Veterinary Medical Association
Graph 7

Journal of the South African Veterinary Association

Graph 8

Journal of veterinary medical science
Graph 7

Journal of the South African Veterinary Association

Graph 8

Journal of veterinary medical science
Tierärztliche Praxis

Graph 9

Veterinary research

Graph 10
Graph 9

Tierärztliche Praxis

Graph 10

Veterinary research
References


