



NATIONAL LIBRARY OF MEDICINE

MEDLARS

....What it is

....What it does



MEDLARS

....What it is

....What it does

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

National Institutes of Health

NATIONAL LIBRARY OF MEDICINE

8600 Rockville Pike

Bethesda, Maryland 20014

MEDLARS: What it is, What it does

This set of 36 slides accompanied by a 12-minute cassette tape recording contains general information on the computer-based Medical Literature Analysis and Retrieval System of the National Library of Medicine.

It is intended for physicians, dentists, nurses, all other health personnel, students, and librarians who will use the System for retrieving biomedical information.

An audible beep signals the appropriate change to the next slide.

The unit is intended for self-study, or for instructor-led group instruction. This booklet may be used as a teacher's guide or for additional study and review by the single viewer.

It is most beneficial to have the "Guide to MEDLARS Services" at hand when the slide series is used.

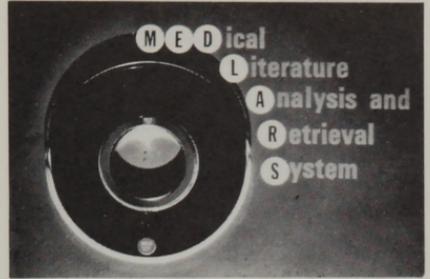
NOTE TO USER: Sound on tape recording begins with slide number 2, after the second audible signal.

The National Library of Medicine has operated its computer-based bibliographic system—MEDLARS—since 1964.



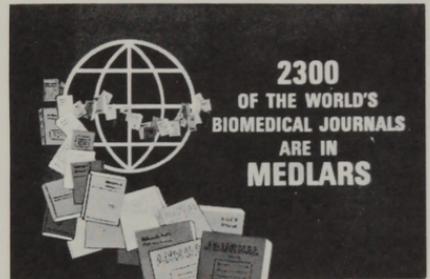
2

MEDLARS means *Medical Literature Analysis and Retrieval System*. It combines the talent of trained literature analysts with the rapid data handling capabilities of high speed computers.



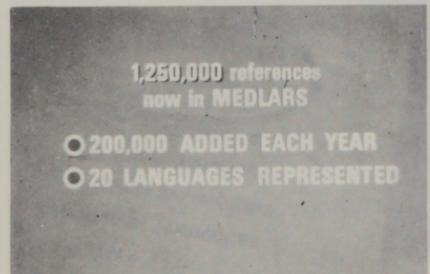
3

MEDLARS contains references from about 2,300 of the world's biomedical serials, most of which are journals. A special committee of medical librarians, editors, and physicians advises the National Library of Medicine on the selection of titles.



4

There are now over 1,250,000 references in the MEDLARS data base. About 200,000 in some 20 languages are added each year.

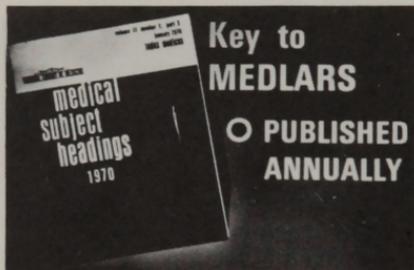


5



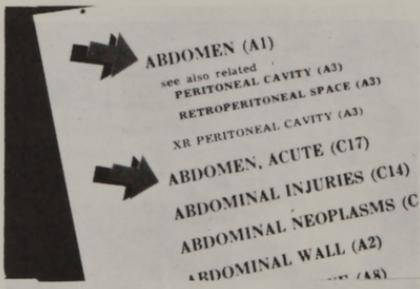
The MEDLARS data base is created by indexers who analyze and describe the contents of journal articles by means of carefully selected terms. These terms, called *subject headings* or *main headings*, are contained in an authorized list.

6



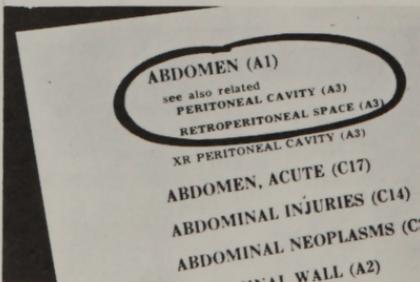
Known as MeSH, for *Medical Subject Headings*, this controlled vocabulary is essential for effective use of the system, since only MeSH terms are used to index articles for MEDLARS. MeSH is updated and published annually.

7



MeSH, the key to MEDLARS, is arranged in two sections. In the first section, 8,000 terms are listed alphabetically and appear in bold, upper case type.

8



The first section of MeSH also includes approximately 9,000 cross references. These lead the indexer—as well as the MEDLARS user, to the appropriate authorized MeSH term that provides entry to the system.

9

The second section of MeSH contains categorized lists showing the rank order from broad to narrow terms.



10

All MeSH terms are structured in this manner to aid the user in finding the most specific term in the vocabulary describing the subject he seeks.

MEDICAL SUBJECT HEADINGS
Categories and Subcategories

A Anatomical Terms	218	D7 Hematologic	
A1 Parts of the Body	218	Agents, Ag	
A2 Musculoskeletal System	220	D8 Hormones, Pr	
A3 Digestive System	222	Substitutes	
A4 Respiratory System	224	D9 Enzymes, Co	
A5 Urogenital System	226	and Precur	
A6 Endocrine System	228	D10 Amino Acids	
A7 Cardiovascular System	230	Nucleic Ac	
A8 Nervous System	232	D11 Carbohydrate	
A9 Sense Organs	236	Related Co	
A10 Tissues, Embryonic Structures	238	D12 Immunologic	
A11 Cells and Cell Constituents	240	and Substa	
A12 Body Fluids and Related Substances	242	D13 Miscellaneous	
A13 Terminology of Animals	244		
B Organisms	246	E Analytical, Diag	
B1 Animal Kingdom - Invertebrates	246	Technics and Eq	
		E1 Diagnostic Te	
		E2. Pathology and	

11

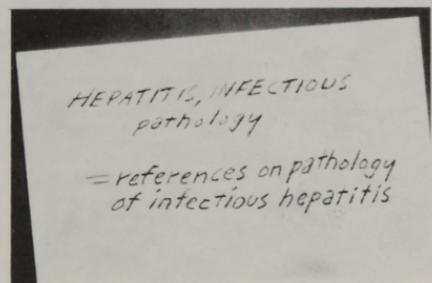
Since the specific term *only* is used to index that subject, articles dealing with hepatitis, for example, will be indexed under that term, and not the broader, LIVER DISEASES. An article on infectious hepatitis will be indexed under *HEPATITIS, INFECTIOUS*.

C4 - Digestive System Diseases

HEPATITIS	Intestini
Hepatitis, Animal (C1, C15)	Protein-
Hepatitis, Homologous	(C4, C
Serum (C1)	Rectal I
Hepatitis, Infectious (C1)	INTESTIN
Hepatitis, Toxic (C14)	PARASIT
HEPATITIS, ANIMAL (C1, C15)	Dysente
HEPATITIS, HOMOLOGOUS	INTESTIN
SERUM (C1)	Fissure
HEPATITIS, INFECTIOUS (C1)	Rectal I

12

MEDLARS also makes use of 60 terms called *subheadings* which modify main headings. The subheading "pathology," for example, attached to a term such as HEPATITIS, INFECTIOUS, permits explicit description of articles on the pathology of infectious hepatitis.



13



All MeSH headings assigned to a particular journal article, together with the full bibliographic reference, are entered into the computer to create a unit record. The combined unit records for each citation comprise the MEDLARS data base.

14

UNIT RECORD

- Author's names
- English title and/or English translation
- Abbreviated journal title
- Volume, page, date of publication
- Language abbreviation for articles other than those in English
- Subject headings describing the contents of the article

A number is assigned for sequential entry into the data base. Each unit record contains: authors' names; English title and/or English translation; journal title abbreviation; volume, page, date of publication; language abbreviation if other than English; and the subject headings assigned by the indexer which describe the article. Other pertinent information, such as country of publication, is also recorded.

15

MEDLARS PRODUCTS

REGULAR PUBLICATIONS

INDIVIDUAL DEMAND SEARCHES

There are two types of MEDLARS products: current, regular publications, and demand searches, a service for individual requesters.

16

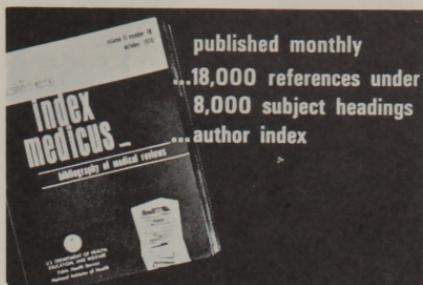
- INDEX MEDICUS
- CUMULATED INDEX MEDICUS
- ABRIDGED INDEX MEDICUS
- MONTHLY BIBLIOGRAPHY OF MEDICAL REVIEWS
- NLM CURRENT CATALOG
- RECURRING BIBLIOGRAPHIES
- MEDICAL SUBJECT HEADINGS
- LIST OF JOURNALS INDEXED IN INDEX MEDICUS
- LITERATURE SEARCHES

Some MEDLARS publications are listed here. They consist of bibliographic publications such as *Index Medicus*, and other publications such as *Medical Subject Headings* and the *List of Journals Indexed in Index Medicus*, and *Literature Searches*.

17

Index Medicus is the Library's most widely known MEDLARS publication. Approximately 18,000 articles are cited in each monthly issue, under about 8,000 MeSH headings. Each issue contains an author index. *Cumulated Index Medicus* is published yearly.

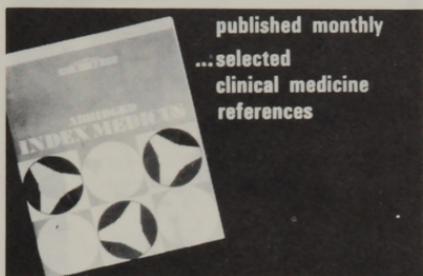
18



published monthly
...18,000 references under
8,000 subject headings
...author index

Various subsets of *Index Medicus* appear in other publications. *Abridged Index Medicus* for example, is a monthly listing of references from 100 key English-language journals in clinical medicine.

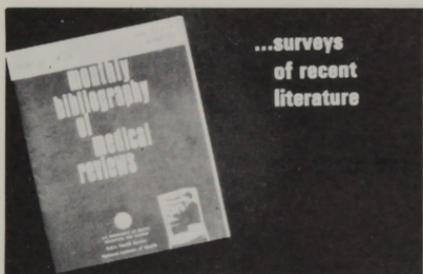
19



published monthly
...selected
clinical medicine
references

Another subset of *Index Medicus* is the *Monthly Bibliography of Medical Reviews*. This publication contains references to those journal articles which are well documented surveys of recent literature. Although published separately, it is also included in *Index Medicus*.

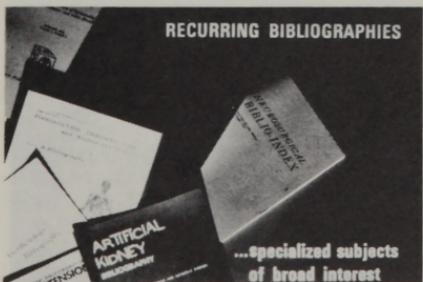
20



...surveys
of recent
literature

A number of publications in specialized fields of biomedicine, also derived from the MEDLARS data base, are produced by NLM in cooperation with professional organizations and research institutions. They are known as *Recurring Bibliographies*. A complete list is available from your librarian.

21



...specialized subjects
of broad interest



Having described briefly the MEDLARS publications, let us now look at the second major product of MEDLARS: computer-produced demand bibliographies for individual requesters, also known as demand searches.

22



Requests for MEDLARS demand searches may be submitted by health personnel or other professionals who need access to the biomedical literature.

23



MEDLARS search services are available throughout the United States at designated locations.

24



MEDLARS services are also available in other countries.

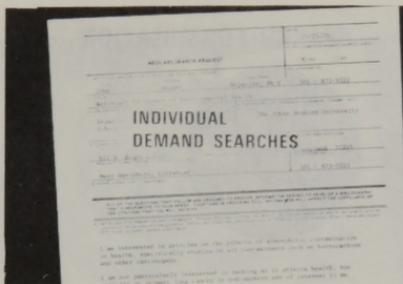
25

The guide to MEDLARS services, available at most health science libraries, lists the addresses of all centers providing MEDLARS services, and the geographic regions they serve.



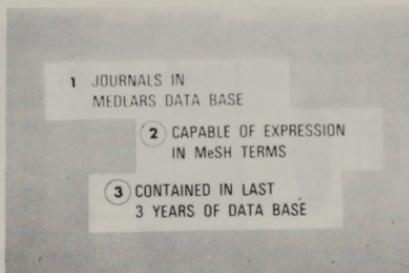
26

MEDLARS requests should be submitted in writing, preferably on MEDLARS search request forms. Before a request is accepted for formulation and processing, it is screened to determine its suitability.



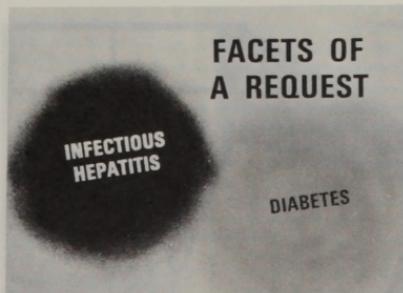
27

To be accepted, a request must meet three primary requirements. (1) The request must be for references likely to have been published in the biomedical journals entering MEDLARS. (2) It must be clear and concise, and capable of precise expression in MeSH terms. (3) The request must be satisfied by a search of the last three years of the file.

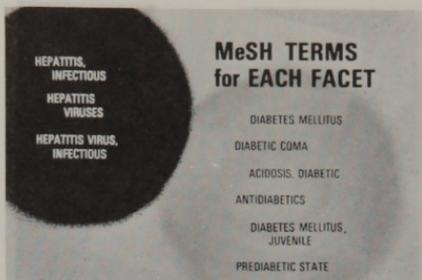


28

In this example, references are wanted on diabetes in infectious hepatitis. The request is first divided into its component facets, in this case, infectious hepatitis and diabetes.

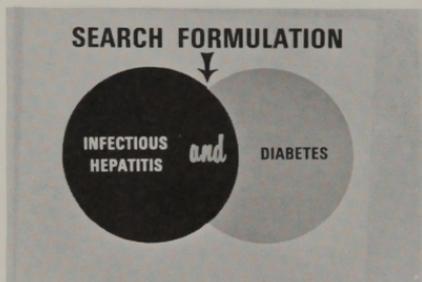


29



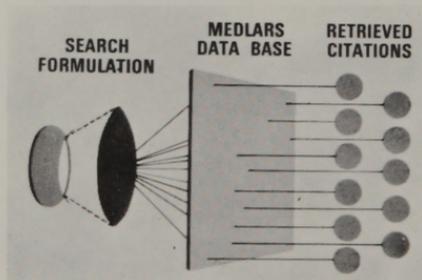
Next, a group of terms is selected from MeSH for each facet of the request. Shown is a partial list of MeSH terms that either denote or connote in MEDLARS, the medical concepts of infectious hepatitis and diabetes.

30



The terms in each facet are grouped together, and the facets are then combined in a search formulation using logical connectors. The search formulation demands that citations be retrieved if they were indexed with terms from both facets. This is represented by the intersection of the two facets.

31



When the index terms of a citation on file match one of the combinations of index terms demanded by the search formulation, that citation is retrieved.

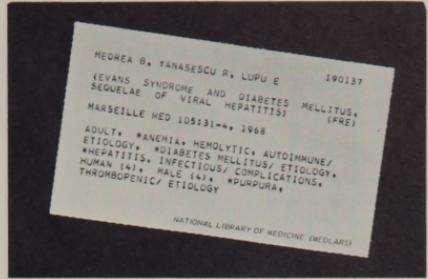
32



All retrieved citations, grouped according to any one of a number of possible arrangements specified by the requester, are printed out on continuous computer paper or 3 x 5 inch cards. This is called a demand bibliography or a demand search.

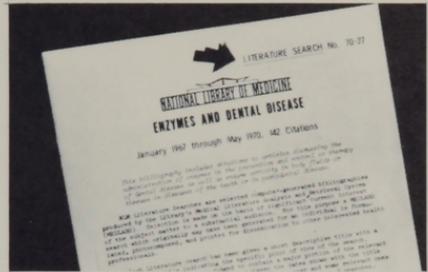
33

On the printout, each retrieved citation contains the bibliographic reference, and also, all the subject headings and subheadings assigned to it in the indexing process. When viewed in the context of the title, the subject headings convey more information about the content of the article than does the title alone.



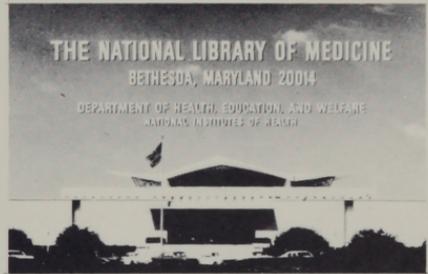
34

Demand searches of potentially broad interest may be selected for further processing, so they can be widely distributed. Such searches are carefully edited and published. They are referred to as *Literature Searches*, and are available upon request from NLM. A complete list appears in *Index Medicus* and several other publications.



35

In summary, MEDLARS is a powerful data-handling system combining efforts of literature analysts assisted by machines. Please feel free to contact the National Library of Medicine, or your regional or local medical library.



36

NOTE TO USER: Please be sure to rewind the tape for the next user when you are finished.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

Publication No. (NIN) 72-299