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Research in the area of Health: 1 – DeCS Database (Health Sciences Descriptors)

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Introduction

In the December, 2003 Issue, the definition for referential databases in the Health field was presented, and a methodology was suggested for the development of a good quality bibliographic research (1).
As a result of the paper mentioned above, the methodology is extended here, by introducing the steps, through supportive classes on how to search / retrieve information from the databases that will be mentioned. Supporting the autonomy of the users belonging to the health areas for information retrieval, allowing remote access to those free databases, is one of this series' purposes by step-by-step guides.

First Step – Finding the authorized and worldwide acknowledged terminology (structured vocabulary). This vocabulary is necessary for describing, organizing and helping the user towards information he / she looks for. The use of a structured vocabulary allows that the researcher retrieves information with the correct term, used for describing the content of that scientific document" (2).

Before carrying out the search, DeCS (Descriptors in Health Sciences) must be accessed in order to find the subject through keywords, descriptors or unique terms. Research in DeCS is fundamental for descriptor selection, in order to facilitate the processing of the bibliographical search and the access to the scientific papers.

DeCS is a structured and trilingual (Portuguese, Spanish and English) vocabulary, based on term collections, sorted out for helping information access.

Vocabularies are applied as a kind of filter between the language used by the author and the area terminology. It may also be considered as research assistants, by helping the user to refine, expand or improve his searches, allowing objective results (3).

BIREME (http://www.bireme.br) developed the DeCS vocabulary in 1986 by translating and adapting the Medical Subject Headings – MeSH (http://www.nlm.nih.gov/mesh/meshhome.html) from the U.S. National Library of Medicine. MeSH exists since 1963 for indexing documents such as: scientific journal articles, books, congress proceedings, technical reports, and other kinds of materials. The first step is fundamental for retrieving scientific literature subjects on databases like:

- ***LILACS*** http://bases.bireme.br/cgi-bin/wxislind.exe/iah/online/?IsisScript=iah/iah.xis&base=LILACS&lang=p

- ***MEDLINE*** http://bases.bireme.br/cgi-bin/wxislind.exe/iah/online/?IsisScript=iah/iah.xis&base=MEDLINE&lang=i

- *LIS* http://lis.bvs.br/xml2html/xmlListT.php?xml%5B%5D=http://lis.bvs.br/lis-Regional/l/define.xml&xsl=http://lis.bvs.br/lis-Regional/home.xsl

- *SciELO* http://www.scielo.org/index.php?lang=en and others

The DeCS Structure

Built on 17 categories, its hierarchical structure is based on the categorization of knowledge into decimal classes and subclasses, acknowledging conceptual and semantic relations and its terms are presented in a hybrid structure of pre and post coordination, and annually updated.

The 2004 DeCS version has 159,958 descriptors with synonyms and definitions in three languages. Expanding MeSH, two more specific knowledge fields were included as follows:

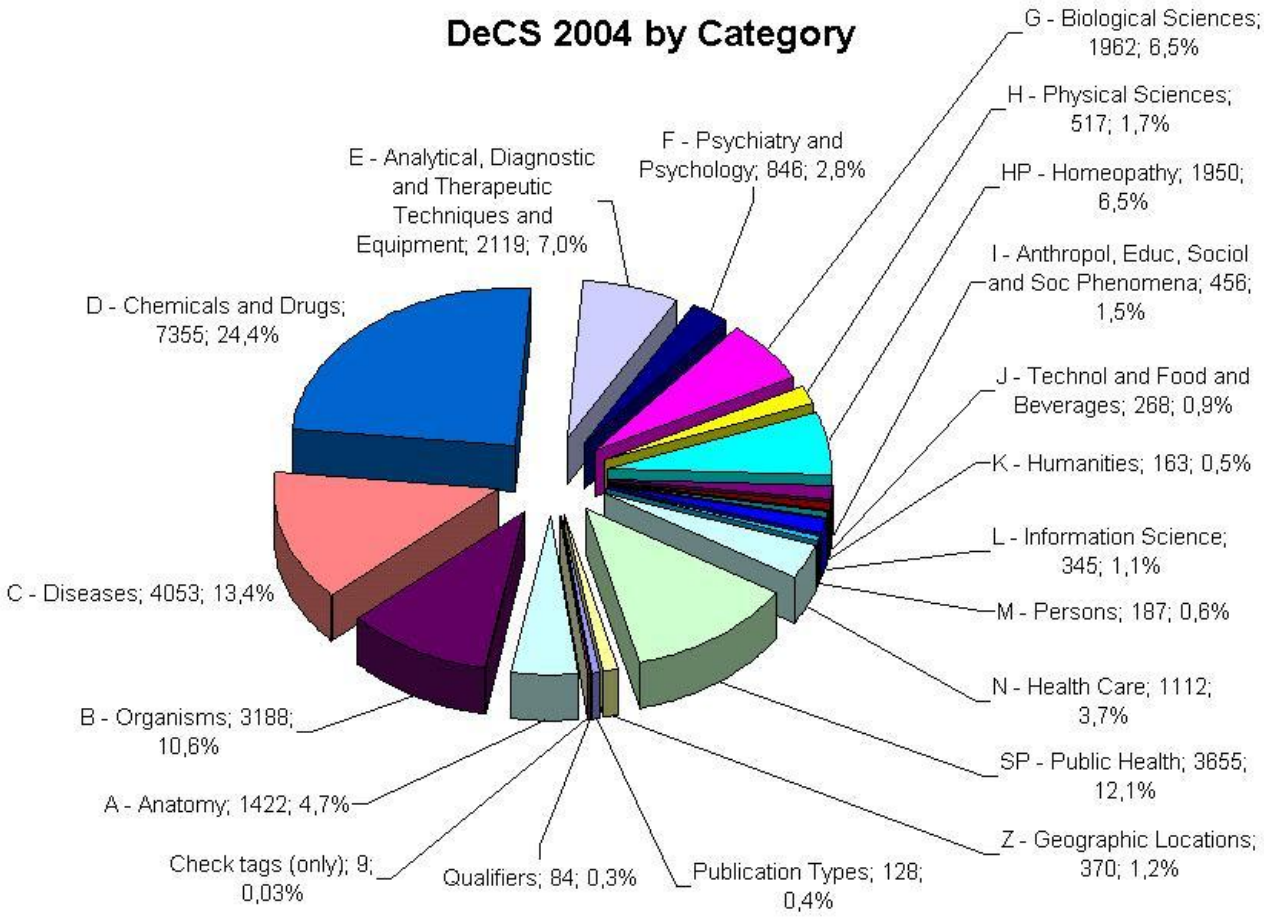
- *Public Health* – with 9,876 descriptors, plus synonyms and definitions in the three languages. (http://decs.bvs.br/cgi-bin/wxis1660.exe/decsserver/?IsisScript=../cgi-bin/decsserver/decsserver.xis&interface_language=i&previous_page=homepage&previous_task=NULL&task=hierarchic&mfn_tree=1&categorie=SP)

- *Homeopathy* - with 8,041 descriptors, plus synonyms and definitions in the three languages. (http://decs.bvs.br/cgi-bin/wxis1660.exe/decsserver/?IsisScript=../cgi-bin/decsserver/decsserver.xis&interface_language=i&previous_page=homepage&previous_task=NULL&task=hierarchic&mfn_tree=1&categorie=HP)

DeCS Categories are:

- Anathomy [A]
- Organisms [B]
- Diseases [C]
- Chemicals and Drugs [D]
- Analytical, Diagnostic and Therapeutic Techniques and Equipment [E]
- Psychiatry and Psychology [F]
- Physical Sciences [G]
- Homeopathy [HP]
- Anthropology, Education, Sociology & Social Phenomena [I]
- Technology and Food and Beverages [J]
- Humanities [K]
- Information Science [L]
- Persons [M]
- Health Care [N]
- Public Health [SP]
- Geographic Locations [Z]

Table 1 – **Statistical Data – DeCS 2004**

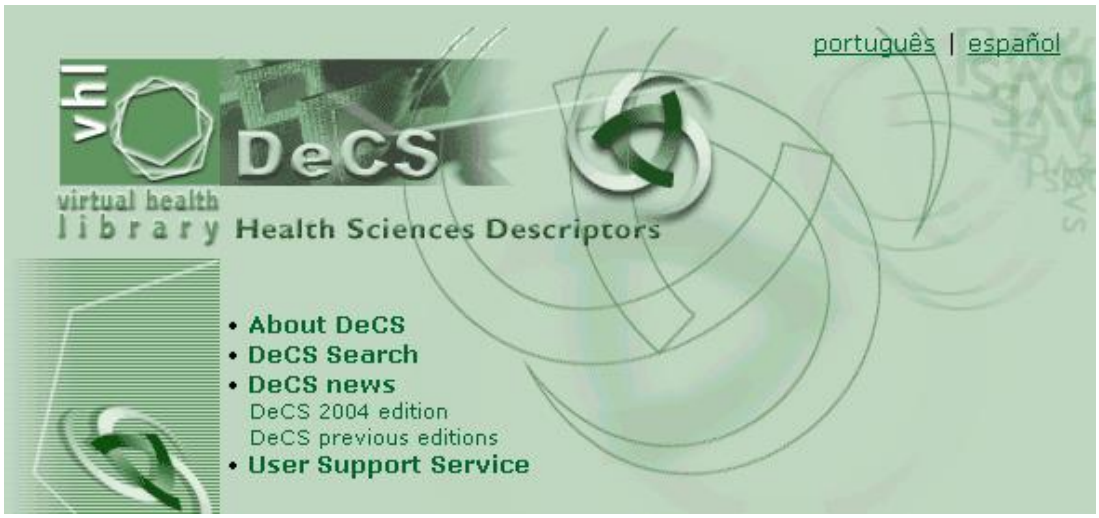


Source: Statistical data for DeCS [4]

DeCS Database Access

Second Step:

To begin searching the DeCS vocabulary, type its web address: http://decs.bvs.br



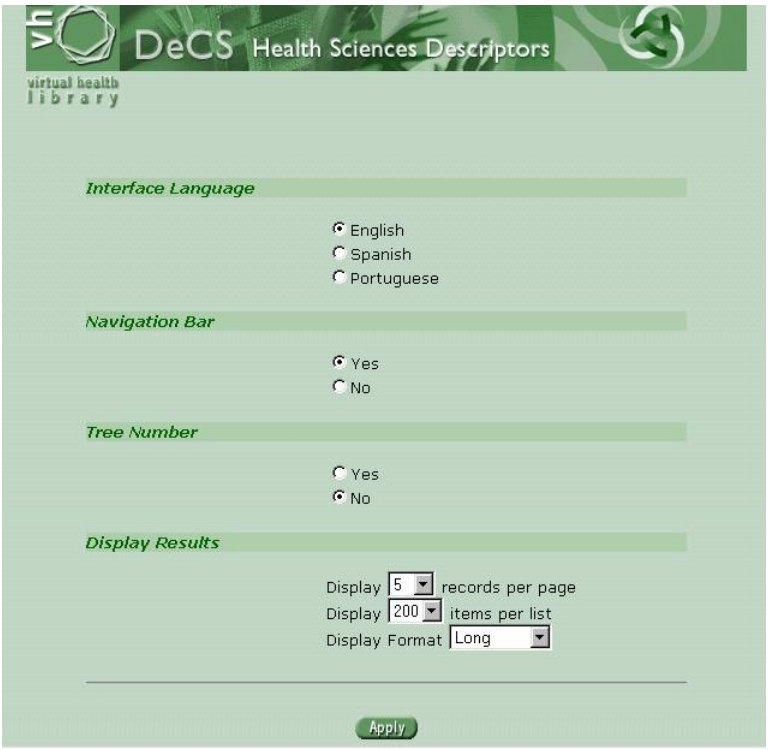
Select the option **DeCS Search**

Choose the **language for the descriptors**:

- English
- Spanish
- Portuguese

Before choosing in which of the forms to search, the *Config* button allows configuring (or setting up) the interface language as well as the results presentation.

Note: The *Config* button does not need to be changed as there already is a default configuration.



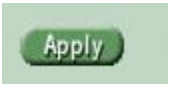
The items that can be changed are:

- Interface languare - for English, Spanish or Portuguese;
- Navigation bar - makes available command buttons, which allows page-by-page navigation up to the end of the result;
- Hierarchical (or tree) number - in case you want the category number(s) to be shown;
- Display results - displays from 5 up to 40 results per page;
- Display 200 – 300 items per list in the Index.
- Presentation Format:
    - **Long** – Descriptor is displayed in English, Spanish and Portuguese; category; descriptor definition; indexing note; allowed qualifiers, DeCS record number and unique MeSH identifier.

    - **Short** - Descriptor is displayed in English, Spanish and Portuguese; category numbers and allowed qualifiers.

    - **Dictionary** - Descriptor is displayed in English, Spanish and Portuguese; category numbers and descriptor definition.

In case you want to change any of the commands above, just click on the Apply button.



Two independent forms are displayed:

1) Search by Word
2) Search by Index

1) Searching by Word

Type the descriptor in the search box

Choose:

- Word or Term
- Exact Descriptor

Option
Word or Term

Type a search word in the search box – Anastomosis, then click Search.

Search result:

The search was made in any term or word that comprises the descriptor, resulting at 5 descriptors found.

By choosing
Exact Descriptor:

The user must know the complete descriptor prior to searching. In case the user does not know if the term exists as a descriptor, it is recommended to check the Keyword in Context Index.

The search result is nulled because there is no exact term for " Anastomosis".

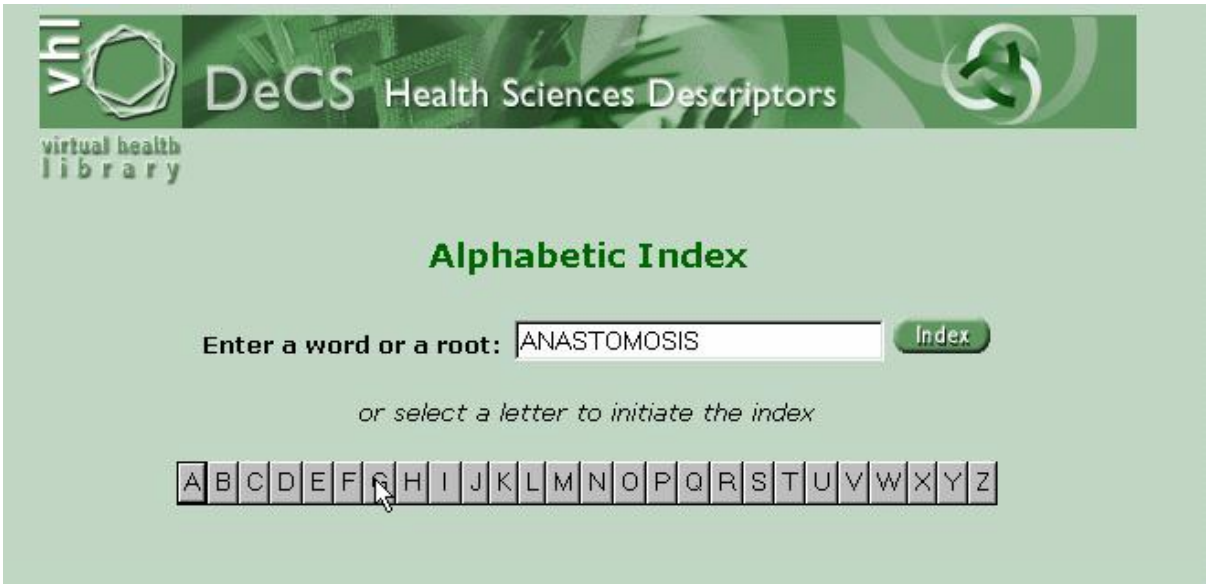
2) ***Searching by Index*** allows searching the following indexes:

a) Alphabetical
b) KWIC or **K**e**w**ords **i**n **C**ontext
c) Hierarchical

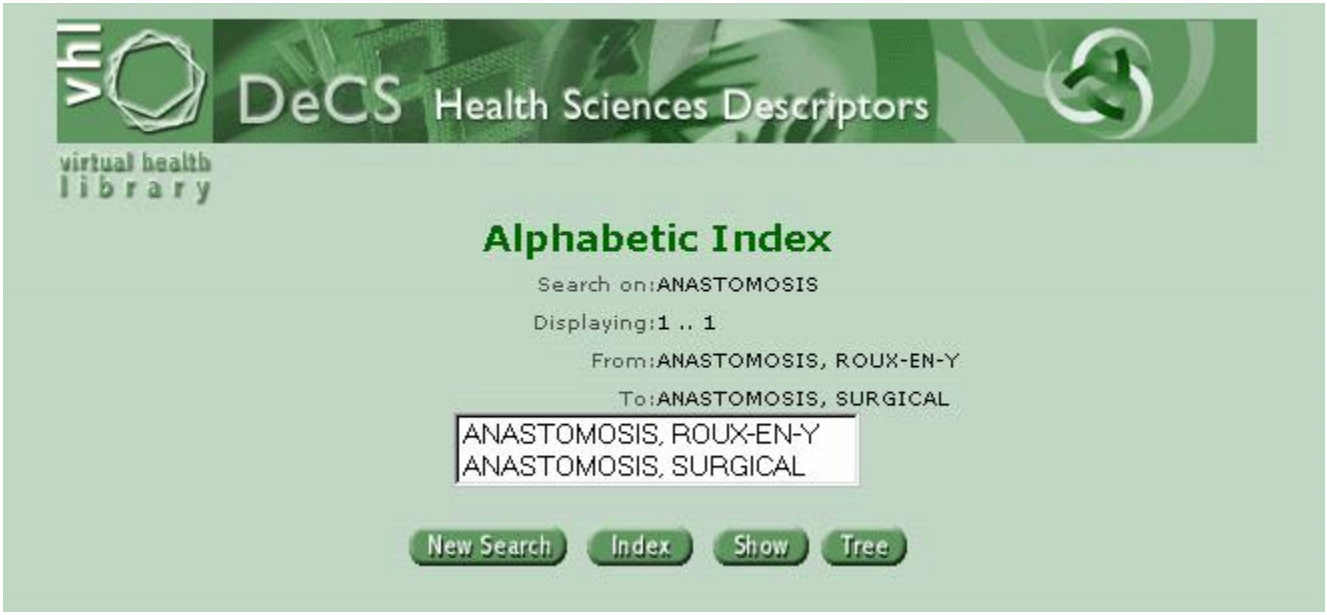
a) Alphabetical index

The Alphabetical index allows searching through the vocabulary by typing the entire term, its first part, its latin or greek root, or its initial letter through the "alphabetical ruler" that will alphabetically find all terms that begin with the chosen word. The system retrieves every term that begins with the search expression, arranging them alphabetically.

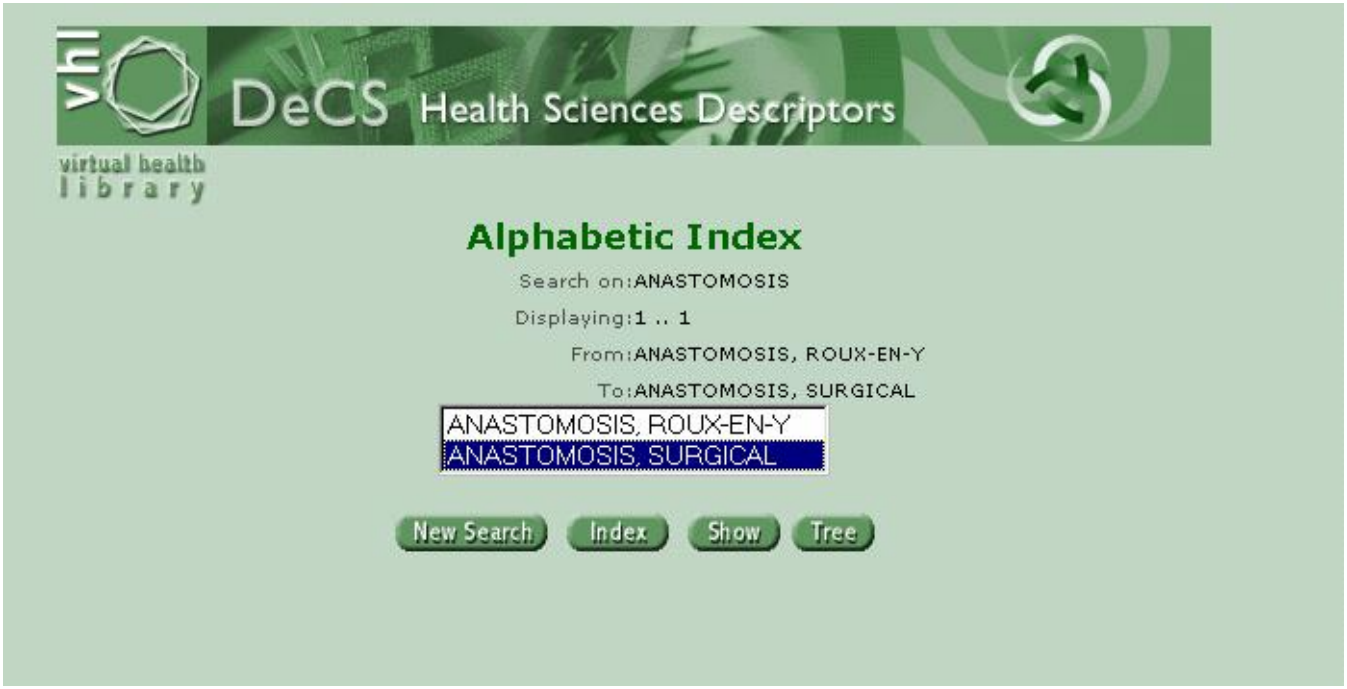
Example: Anastomosis. Type the term in the search box and click on the *Index* button.



The result will be a list of descriptors beginning with Anastomosis.

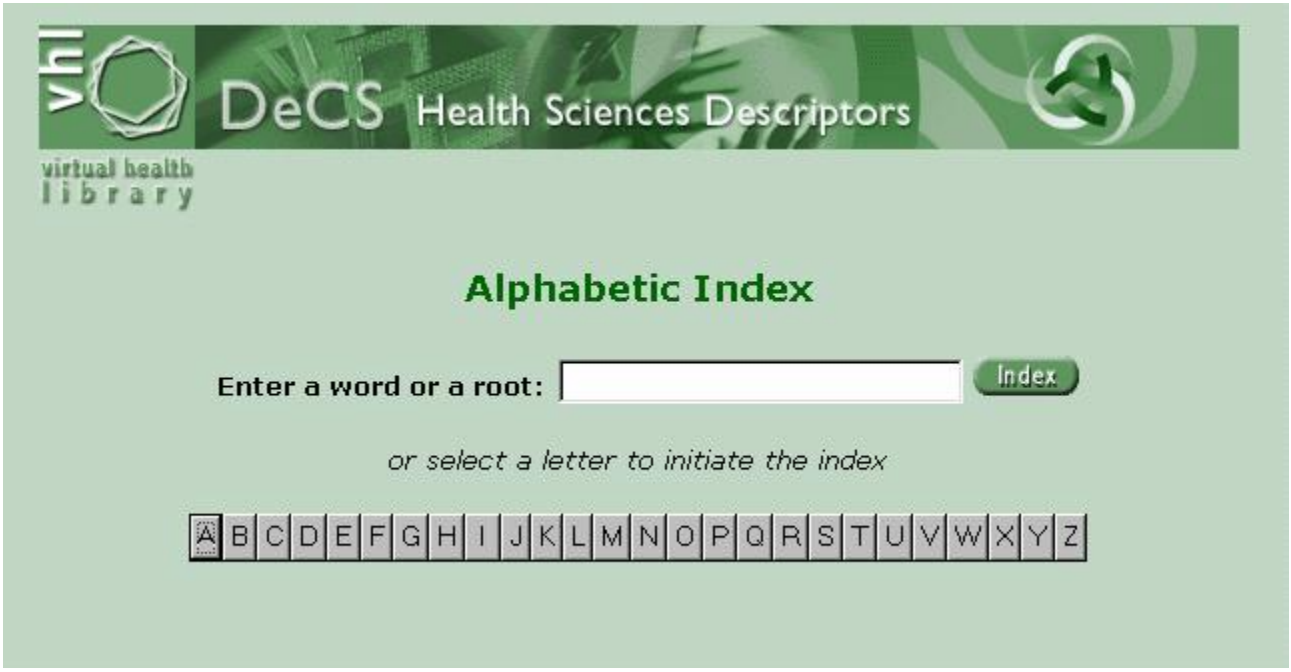


Select the descriptor Anastomosis, Surgical

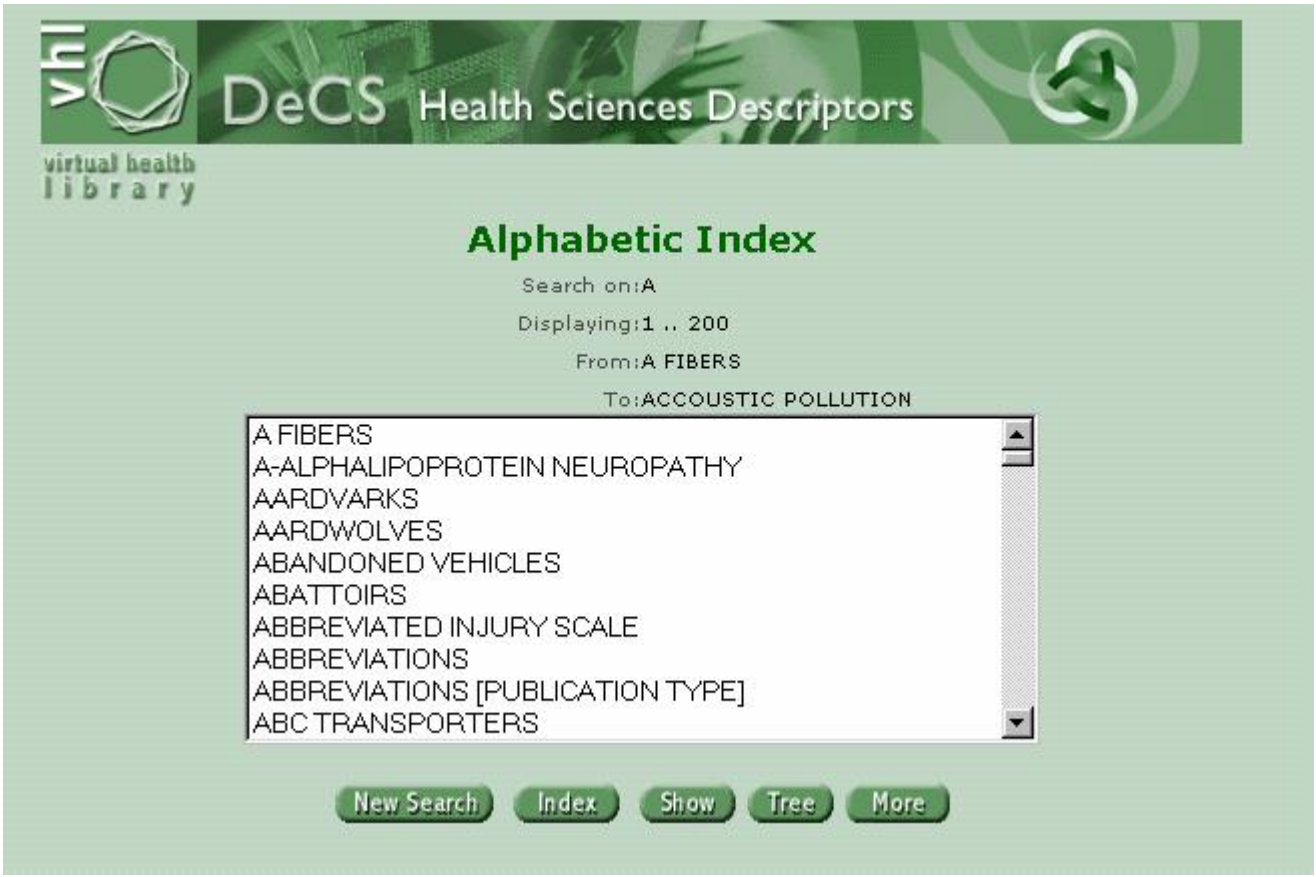


Resulting screen:

You may use the alphabetical ruler, by clicking the initial letter of the descriptor you want to look for.



Click on letter A in order to display all descriptors beginning with an A.



In order to see the entire *Alphabetical list* for the letter A, click on the *More* button until you get to the descriptor Anastomosis.

Available Buttons:

New Search – The *New Search* button returns to the initial *DeCS Search* page,

Index – The *Index* button returns to the *Alphabetical Index* page.

Show –The *Show* button shows the complete data of the selected descriptors. (Hint: the SHIFT key allows you to select more than one descriptor in a sequential order; and the CTRL key in a non-sequential order).

Tree – The *Tree* button shows the locations of the descriptor in the hierarchical tree.

More – The *More* button goes to the next screens.

Example: After advancing a few screens, the descriptor *Anastomosis, Surgical* was selected.

Alphabetic Index

Search on:A

Displaying:2190 .. 2389

From:AMYLOID PROTEIN A4

To:ANEMIA, MEDITERRANEAN

ANAPLASMA OVIS
ANAPLASMA PHAGOCYTOPHILUM
ANAPLASMATACEAE
ANAPLASMATACEAE INFECTIONS
ANAPLASMOSIS
ANASTOMOSIS, ROUX-EN-Y
ANASTOMOSIS, SURGICAL
ANASTREPHA
ANATOMIC MODELS
ANATOMY

New Search | Index | Show | Tree | More

Resulting screen:

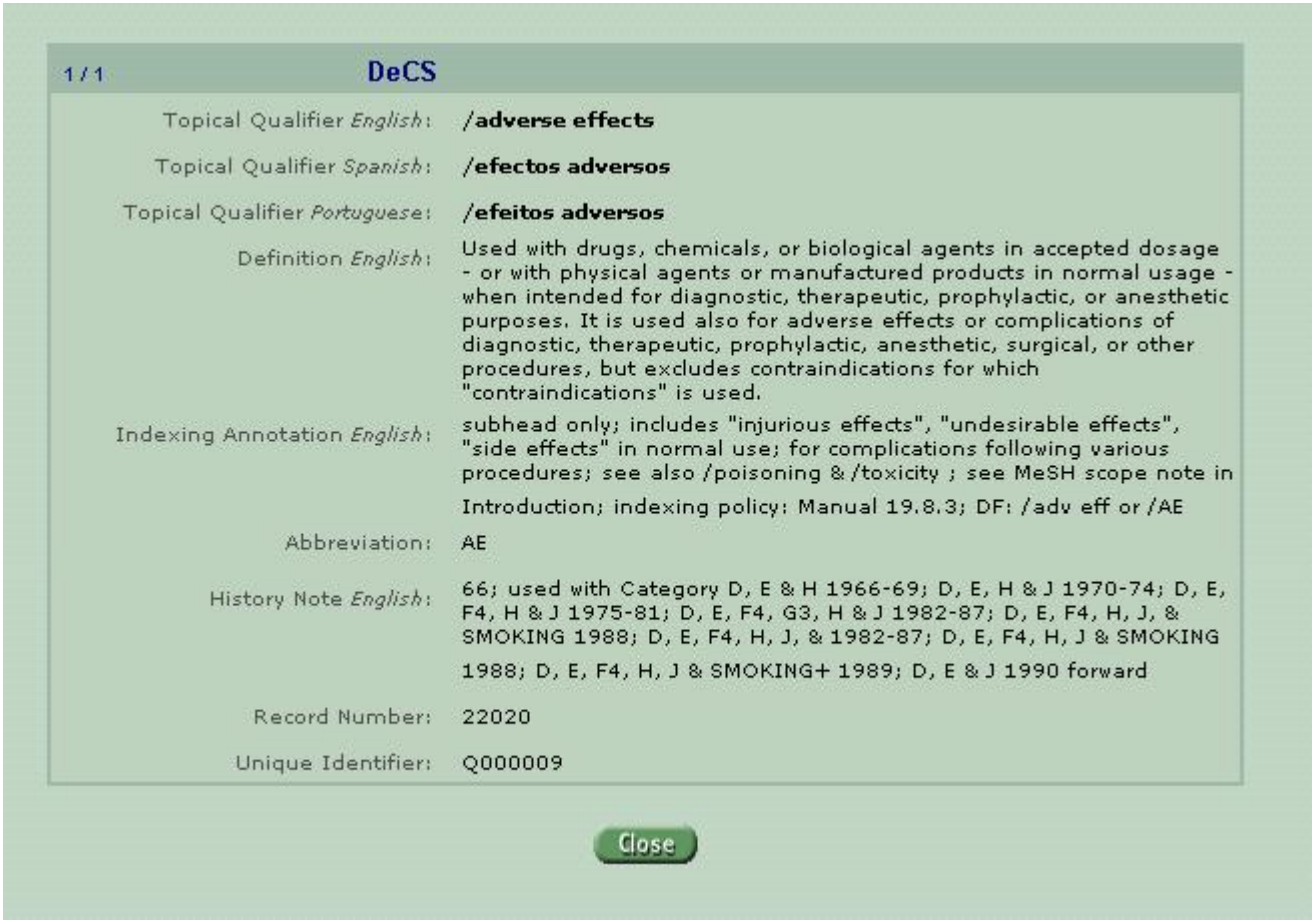
A screen will be displayed, with information about the descriptor, in three languages, such as synonym(s), category(ies), that is, its hierarchical codes, its complete definition, and the qualifiers that may be applied with the descriptor.

One of the items above must be regarded important for combining with the descriptor: the qualifiers. Qualifiers are terms that are added to descriptors in order to define different aspects, concepts, and points-of-view which are analysed by the author for a specific subject matter.

These different aspects of a subject matter or descriptor are known as qualifiers. A qualifier is connected to the descriptor, separated by a slash bar (/) during indexing work. (5)”

By clicking on a qualifier, it will be shown in three languages (english, spanish, and portuguese), with its definition and indexing note, so the indexing professionals will feed databases in the chosen descriptor language.

Example:



Below is a complete list of all the qualifiers existing in DeCS, which may be obtained by typing a slash bar ("/") when searching with the alphabetical or KWIC indexes

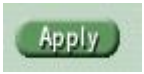
/abnormalities	/administration & dosage	/adverse effects
/agonists	/analogs & derivatives	/analysis
/anatomy & histology	/antagonists & inhibitors	/biosynthesis
/blood	/blood supply	/cerebrospinal fluid
/chemical synthesis	/chemically induced	/classification
/complications	/congenital	/contraindications
/cytology	/deficiency	/diagnosis
/diagnostic use	/diet therapy	/drug effects
/economics	/education	/embriology
/enzimology	/growth & development	/history
/immunology	/injuries	/innervation
/instrumentation	/isolation & purification	/legislation & jurisprudence
/metabolism	/methods	/microbiology
/mortality	/nursing	/organization & administration
/parasitology	/patogenicity	/poisoning
/radiation effects	/radionuclide imaging	/secondary
/secretion	/standards	/surgery
/therapeutic use	/therapy	/toxicity
/transmission	/transplantation	/trends
/ultrasonography	/ultrastructure	/urine
/utilization	/veterinary	/virology

Still on the *Anastomosis, Surgical* result page, three important buttons are displayed:

New search – alllows for new searches

Config – information already detailed on page 5.

In case you wish to change any of the above commands, click on the *Apply* button

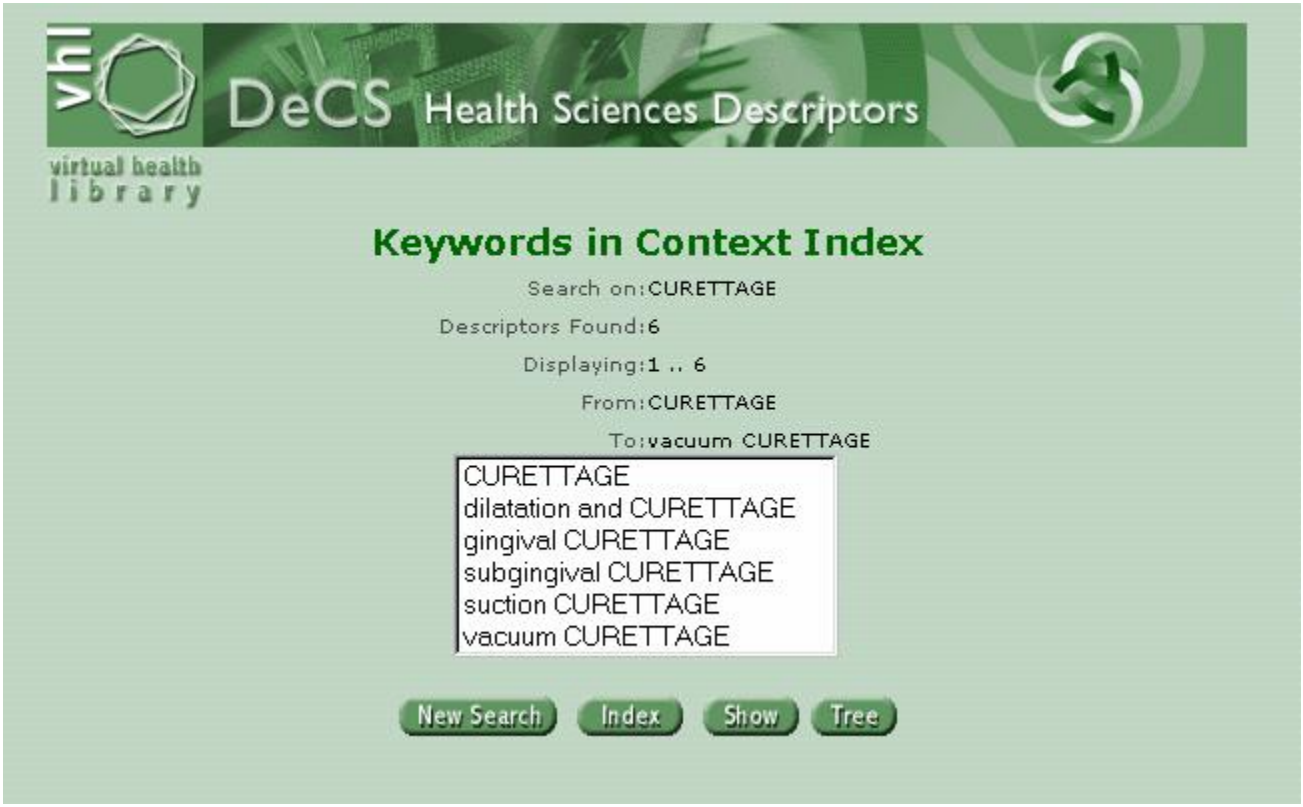


The last two buttons move the screen to the top and to the bottom of the page, respectfully.

b) *KWIC or Keyword in Context* – this is the **best** index. It allows knowing if a word exists in DeCS and thoroughly seeing all terms containing it, regadless if the word is in the beginning, middle or end of the term.

Example: Finding the descriptors that have the word Curettage

Result: Six descriptors were retrieved with the word Curettage at the beginning or at the end of the descriptor. This makes it easier to find all descriptors and allows a global view of the descriptor.



c) *Hierarchical Index* – the subject matters (represented by descriptors) are arranged by their hierarchical relationships, divided into broader subject matters and under them their subclasses.

virtual health library

Tree Index

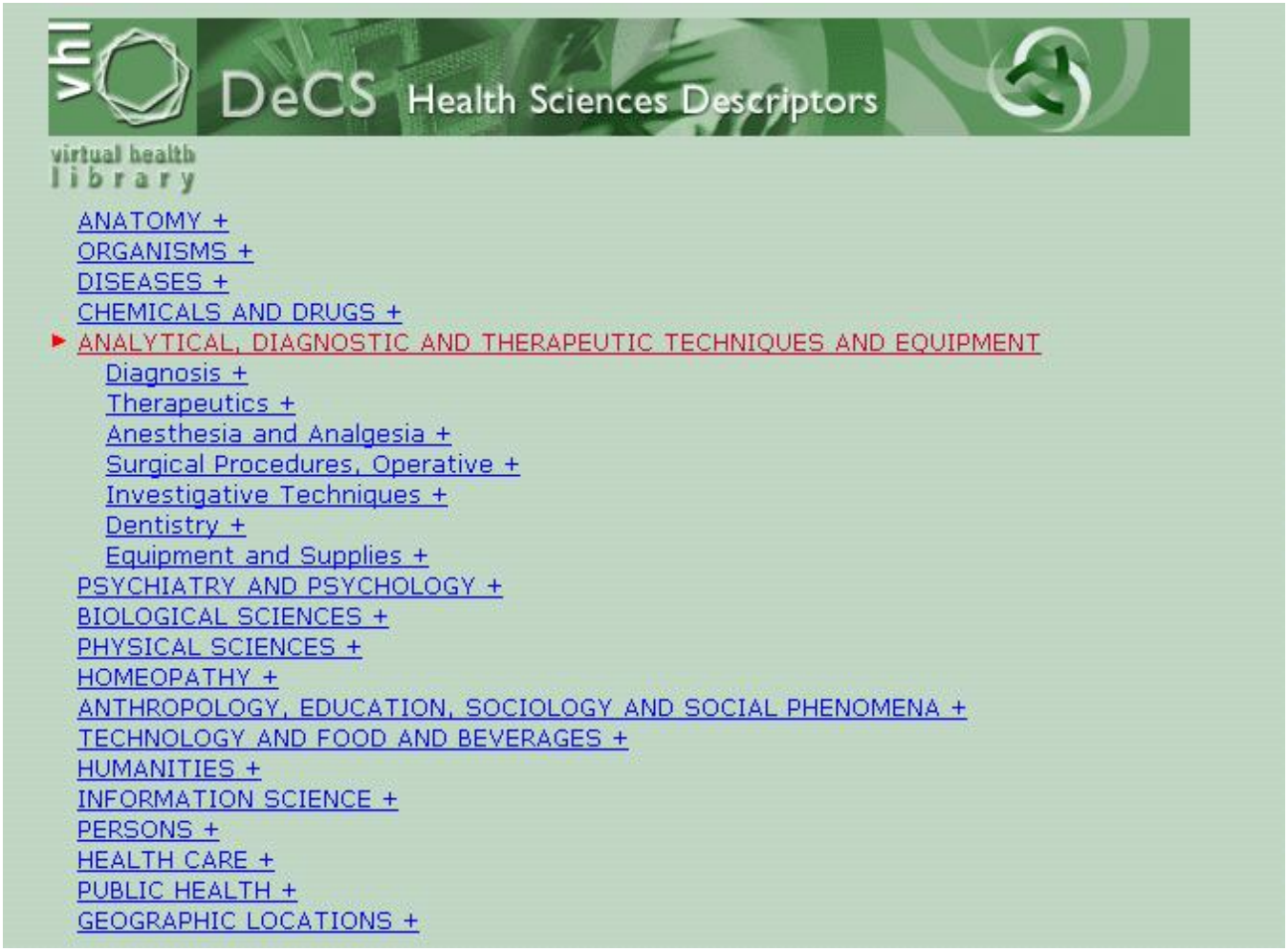
Enter a descriptor: Index

or navigate from tree top

ANATOMY +
ORGANISMS +
DISEASES +
CHEMICALS AND DRUGS +
ANALYTICAL, DIAGNOSTIC AND THERAPEUTIC TECHNIQUES AND EQUIPMENT +
PSYCHIATRY AND PSYCHOLOGY +
BIOLOGICAL SCIENCES +
PHYSICAL SCIENCES +
HOMEOPATHY +
ANTHROPOLOGY, EDUCATION, SOCIOLOGY AND SOCIAL PHENOMENA +
TECHNOLOGY AND FOOD AND BEVERAGES +
HUMANITIES +
INFORMATION SCIENCE +
PERSONS +
HEALTH CARE +
PUBLIC HEALTH +
GEOGRAPHIC LOCATIONS +

Select the item *Analytical, Diagnostic and Therapeutic Techniques and Equipment*

First level



Second level

The subject matters break down from the most general to the most specific level. Like a knowledge tree and its branches and subdivisions, this index is called a **tree structure**.

After getting to know step-by-step how to search DeCS, do the practical exercises by searching through the ***KWIC Index***. The answers are at the end of this article.

Exercises

1. Ligation – which descriptor fits this subject matter ?
2. Surgical Procedures, Colonoscopic – which descriptor fits this subject matter?
3. Does Intraoperative Period allow the use of the aspect /instrumentation?
4. Does Splenectomy allow the use of the qualifier /complications ?
5. Does Antifungal Agents allow the use of the qualifier /poisoning ?

It is hoped that this article has succeeded its objective which is teaching users, step-by-step, how to better find a descriptor on the health area databases.

In order to continue some parts of December 2003's article we published, the planning will be changed for technical reasons.

References

1 - Pellizzon RF, Poblacion DA, Goldenberg S. Pesquisa na área da saude: seleção das principais fontes para o acesso à literatura científica. Acta Cir Bras [online]. Nov./Dec. 2003, vol.18, no.6 [cited 28 November 2003], p.493-496. Available from World Wide Web: <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-86502003000600002&lng=en&nrm=iso>. ISSN 0102-8650.

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4 – BIREME. Centro Latino-Americano e do Caribe de Informação em Ciências da Saúde. Biblioteca Virtual em Saúde. DeCS 2004- statistical data [cited 28 November 2003]. São Paulo: BIREME. Available at World Wide Web: <http://decs.bvs.br/I/statistics2004.htm>

5 – BIREME. Centro Latino-Americano e do Caribe em Ciências da Saúde. Manual de indexação de documentos para a base de dados LILACS. [cited 28 November 2003]. São Paulo: BIREME. Available at World Wide Web: <http://www.bireme.br/abd/P/Manindpt.doc#9.1 Definição e objetivo>

Answers to the exercises:
1 – Ligation
2 – Colonoscopy
3 – Yes
4 – No, the correct qualifier is /adverse effects
5 – Yes

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1 Article written at the Central Library - UNIFESP/EPM
*Note: The descriptors are always shown in three languages.

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