MODULE 4  How to use PubMed

Part 3 – MeSH (Medical Subject Headings).

Instructions

This part of the course is a PowerPoint demonstration intended to show a guided tour of the PubMed interface.

This part of the module is off-line and intended as an information resource for reference use.

This part of the module should be taken before using the live tutorial on the PubMed and does not require a HINARI training password.
Before logging into PubMed we can Log In to the HINARI website using the URL http://www.healthinternetwork.org.
You will need to insert your HINARI User ID and password in the Log In box and click on the “Sign On” Icon.
From the main HINARI webpage you can access PubMed from the “Find articles” link in the body of the webpage. Click on Search for articles through PubMed (Medline).
Welcome to the PubMed Homepage, Part 3 of the tutorial will look at MeSH or Medical Subject Headings.

To access the Mesh Database Click on the link on the left-hand side of the PubMed home page.
MeSH is the controlled vocabulary for indexing articles for MEDLINE. MeSH Terms are assigned as Keywords to each record that is “Indexed for MEDLINE”.

NB. Articles in PubMed that are not on MEDLINE have no MeSH Terms assigned to their records.
To find a MeSH term type your search in the query box and click on "Go".

In this example we will check for a MeSH Term for "Cancer".
From these results we see that the MeSH term for Cancer is "Neoplasms". Click on the linked term for more information.
The record for a MeSH term contains a definition of the term, associated subheadings, a list of entry terms, and the tree view of MeSH. Highlighted above is the definition provided for the term “Neoplasms”:

New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms.
All subheadings associated to a MeSH term are displayed below the definition.
Below the subheading are two check boxes. The first box restricts terms to “Major Topic Headings” only. The second box is to instruct PubMed not to “Explode” a term.
“Entry Terms” are listed along with “See Also” references.
Each record also has a tree view of MeSH displaying the term and its position in the MeSH structure.
To search for records with “Dengue” as a MeSH term enter the term in the query box.
There are three MeSH terms containing the term “Dengue”.

1. **Dengue**
   - An acute infectious, febrile disease caused by the bite of infected *Aedes* mosquitoes. It is characterized by fever, myalgia, headache, and rash. Dengue infection and a separate clinical entity (From Dorland). Year introduced: 1966

2. **Dengue Virus**
   - A species of the genus FLAVIVIRUS which causes an acute febrile and sometimes hemorrhagic disease in man. Dengue is mosquito-borne and four serotypes are known.
   - Year introduced: 1966

3. **Dengue Hemorrhagic Fever**
   - A distinct and virulent form of DENGUE characterized by thrombocytopenia and hemocoagulation (grades I and II) and distinguished by a positive tourniquet test. When accompanied by circulatory failure and shock (grades III and IV), it is called dengue shock syndrome. (From Dorland, 28th ed)
Here is the Dengue record and associated subheadings.

1: Dengue
An acute infectious, febrile disease caused by four antigenically related but distinct serotypes of the DENGUE VIRUS. It is transmitted by the bite of infected Aedes mosquitoes, especially A. aegypti. Classical dengue (dengue fever) is self-limiting and characterized by fever, myalgia, headache, and rash. DENGUE HEMORRHAGIC FEVER is a more virulent form of dengue virus infection and a separate clinical entity. (From Dorland, 28th ed)

Subheadings:
- blood
- cerebrospinal fluid
- classification
- complications
- congenital
- diagnosis
- drug therapy
- economics
- embryology
- enzymology
- epidemiology
- ethnology
- ecology
- genetics
- history
- immunology
- metabolism
- microbiology
- mortality
- nursing
- parasitology
- pathology
- physiopathology
- prevention and control
- psychology
- therapy
- transmission
- ultrasonography
- urine
- veterinary
- virology
To search PubMed check the box next to the MeSH term and select “Send to Search box with AND”, Click on the “Send To” button.
The Term is now entered into the search box. From here you can add keywords or more MeSH Terms to the search. To search click on the “Search PubMed” button.
We can display the results in the “Citation” display format. Here we can see the MeSH terms in each record.
To search using subheadings select the appropriate subheading by checking the selection boxes.
This time we are searching for the MeSH term “Dengue” with a subheading of “prevention and control”.

Dengue

An acute infectious, eruptive, febrile disease caused by dengue virus, transmitted by the bite of infected Aedes mosquitoes, characterized by fever, myalgia, headache, and rash. DENDEU HEMORRHAGIC FEVER is a more virulent form of dengue virus infection and a separate clinical entity. (From Dorland, 28th ed)
Rising dengue death toll in Indonesia.

Arya SC, Varma A.

Publication Types:
- Comment
- Letter

MeSH Terms
- Animals
- Dengue/mortality
- Dengue/prevention & control
- Disease Outbreaks
- Human

The results are displayed here in Citation format showing assigned MeSH terms.
When we restrict to “Major Topic Headings only” we are just selecting articles where the primary subject matter was “Dengue”.
In this example we can see that the “Dengue” MeSH term is limited to Major Topic Headings [MAJR].
In Citation display format Major MeSH terms are identified using *
The History compares the difference between searching for Dengue as a keyword, MeSH term and Major Mesh Term.
There are MeSH terms assigned for geographical regions and countries. In this example we will look at the MeSH terms for “Asia”.
Here is the MeSH record for Asia.

1. Asia

The largest of the continents. It was known to the Romans more specifically as what we know today as Asia Minor. The name comes from at least two possible sources: from the Assyrian asu (to rise) or from the Sanskrit usa (dawn), both with reference to its being the land of the rising sun, i.e., eastern as opposed to Europe, to the west. (From Webster's New Geographical Dictionary, 1988, p82 & Room, Brewer's Dictionary of Names, 1992, p34)

Subheadings:
- epidemiology
- chronology

Restrict Search to Major Topic headings only
Do Not Explode this term (i.e., do not include MeSH terms found below this term in the MeSH tree)

Entry Terms:
- Southern Asia
In the tree view we can see a breakdown of Asia by region and country.
From within the Asia, Southeastern region we will select “Myanmar”
In this example we can see that “Burma” and “Myanma” are Entry Terms for “Myanmar”
In this example we will search for Myanmar as a MeSH term.
The article highlighted is about Plasmodium infections in Thailand and includes information about Myanmar.
MeSH is NLM's controlled vocabulary used for indexing articles for MEDLINE/PubMed. MeSH terminology provides a consistent way to retrieve information that may use different terminology for the same concepts.

- Use the MeSH database to find MeSH Terms and build a search strategy.

MeSH database tutorials:

- Searching with the MeSH Database
- Combining MeSH Terms
- Applying Subheadings and other features of the MeSH Database

There is a MeSH term for “Developing Countries”
The Developing Countries MeSH term was introduced in 1971 and is not defined by the UNDP or World Bank.
In this example we can see the Entry Terms that will map to the Developing Countries MeSH Term.
In this example we are going to search for articles tagged with the Developing countries MeSH term.
This is the end of Module 4 Part 3.

There is a Work Book to accompany this part of the module. The workbook will take you through a live session covering the topics included in this demonstration with working examples.