PubMed/Medline: What Every Gastroenterologist Needs to Know

Justus Krabshuis

Earlier this year, I asked an eminent New York gastroenterologist/endoscopist a few short questions about the average U.S. gastroenterologist's awareness of PubMed/Medline. It's one man's view, admittedly – but surely his answers below are not far from the truth?

- *Do gastroenterologists use PubMed?* Yes.
- *Do gastroenterologists use MeSH?* I doubt that most use MeSH.
- *Do gastroenterologists use Boolean logic in searches?* Most know about it, but are not sure how to do it.
- *Do they use the Preview/Index features?* I don't think so.
- *Do they combine free text and indexing?* Definitely not.
- *Are they aware of the limitations of MeSH (e.g., creation date issues; indexing policies)?* Definitely not.
- *Are they aware of the limitations of Medline vis-à-vis other databases in terms of currency, scope, and coverage?* Not at all.

Let's assume the above views are true, and let's also assume that it matters.

**Searching PubMed**

PubMed searching is easy: just enter search terms in the query box and press the Enter key, or click Go. The Features bar directly underneath the query box provides access to additional search options. The PubMed query box and Features bar are available from every screen, so you don't need to return to the home page to enter a new search.

You can enter one or more terms (e.g., "gastroesophageal reflux disease") in the query box, and PubMed automatically combines (ANDs) significant terms together using *automatic term mapping*. The terms are searched in various fields of the citation. If your search includes the Boolean operators AND, OR, NOT, they have to be in upper case:

- Gerd OR Gord
- Gerd AND children
- Gerd NOT animals

Once you click Go, PubMed will display your search results. The query box displays your search terms as you entered them.

You can modify your current search by adding or eliminating terms in the query box or in Details. If you applied Limits, the check box next to Limits will be marked, and a listing of your limit selections will be displayed. To turn off the existing limits, click on the check box to remove the check before running your next search.

It is very useful to be able to limit the search to "title" and to "time".

*Example:*
1. Type "how to find the evidence you need" in the query box.
2. Click on "Limits" on the Features bar.
3. Select "Title" from the drop-down menu that starts with "All fields".
4. Click "Go"

The four hits together provide you with a small comprehensive vade-mecum for searching Medline.

**Searching for Journals**

PubMed ([www.pubmed.org](http://www.pubmed.org)) is a service provided by the U.S. National Library of Medicine (NLM) and includes over 14 million citations for biomedical articles.

You can search by the full journal title – e.g., molecular biology of the cell; the Medline abbreviation – e.g., mol biol cell; the International Standard Serial Number (ISSN) – e.g., 1059-1524; or the variant title as it appears in the NLM catalog. See the Journals Database there for the full journal titles.

**Example:**

1. Click on "Journals database" in the left-hand bar.
2. Type in "gastroenterology" in the search box, and click "go".
3. From the 41 journals with titles including the word "gastroenterology," click the journal you are interested in – e.g., "China national journal of new gastroenterology = Chung-kuo hsin hsiao hua ping hsueh tsa chih".

**Searching for Books**

Did you know you can search 'books' in PubMed/Medline? Books on the "Bookshelf" are also linked to terms in PubMed abstracts: when viewing an abstract, select the "Books" link to see phrases within the abstract hyperlinked to book sections. Click on 'books' in the drop-down menu just to the left of the search box, as illustrated below. Then type in your search – e.g. "Endoscopic Retrograde Cholangiopancreatography" and click "Go". Note the 138 items in the HSTAT book series.
Searching for Articles
Looking for an article? Use the "Single citation matcher"! Try and remember as many details of the article as possible.

Example:
Let's say you remember that Professor Jerry Waye wrote an article about colonoscopy – you can't remember the journal or the title, but you do remember that the word "painless" was in the title. This is easy: go to "Single citation matcher" in the left-hand navigation bar. Fill in as many details as you can remember – e.g., the author name, WAYE J, and fill in the word you remember, e.g. "painless"; click "Search" and voilà!

Searching for Authors
To search by an author's name, enter the name in the format of last name plus initials (with no punctuation) – e.g., Waye JD, Tytgat GN. PubMed automatically truncates the author's name to account for varying initials and designations such as "Jr." or "2nd." A name entered using this format will prompt a search in the author field. If only the author's last name is entered, PubMed searches the name in All Fields, except when the author name is found in the MeSH translation table (e.g., Yang will search as Yin-Yang [MeSH] or Yang [Text Word].) To search for an author in the author field when only the last name is available, qualify the author name with the author search field tag [au] – e.g., tytgat [au].

Note:
- Use double quotes around the author's name with the author search field tag [au] to turn off the automatic truncation, e.g., "smith j" [au].
- Use the [au] search tag if the author name is also a subject term – e.g., moran a [au]. The unqualified phrase, moran a, will search as "moran A"[Substance Name] OR moran a [Text Word].
So, you want to search for articles written by Professor J.D. Waye, the Editor of WGN.

Example:

1. Waye JD
2. Click "go"

Searching for a Topic – GERD or GORD?
The key problem here is how to make sure you find all relevant articles about gastro-
(o)esophageal reflux disease – unless you only want key articles such as reviews, perhaps. If you
search for "gord" you will not find "gerd," and vice versa. But if all articles dealing with "gerd"
and "gord" are indexed with the term "GERD," then you will find all articles about
gastroesophageal reflux disease, whatever the spelling and description used by the author, if you
search for articles indexed with the indexing term "GERD."

This is the first of three reasons why you should use: indexing. The second reason has to do with
what is called "explosion." If you search for "proton-pump inhibitors" (PPIs), you will only find
articles where these words occur together – usually adjacent to each other in that order. But
surely you want to find literature dealing with 'esomeprazole' (drugs are usually indexed with
their INN generic name – so Nexium is indexed as "esomeprazole," for example – yet another
reason for using indexing ) and other PPIs. In other words, you need an indexing system that
assigns "narrower" terms like esomeprazole to broader terms such as "proton-pump inhibitors."
This indexing system is called Medical Subject Headings (MeSH). Find MeSH terms by clicking
on "MeSH Database" in the left-hand side bar. Then maybe spend a few moments viewing the
animated tutorial – this will pay off later.

Clinical Queries
PubMed/Medline does provide some help by offering a choice between "clinical queries" and
"systematic reviews" – the two poles of the study-type evidence continuum. If you click "clinical
queries" in the left-hand bar, you can choose between the options below:
Category: therapy – diagnosis – etiology – prognosis
Emphasis: sensitive search (broad) – specific search (narrow)

If you click "systematic reviews", it limits retrieval to articles indexed with the MeSH term
"systematic reviews" and/or indexed with "systematic review" as a document type.

Example:

1. Click "Clinical Queries" in the left-hand bar on the home page under "PubMed Services".
2. Mark: "Systematic Reviews".
3. Type "dysphagia" in the subject search box at the bottom of the screen.
4. Click "Go"

And sure enough – the Cochrane Reviews come rolling out.
Complex Evidence-Based Searches
You are a very busy clinician; instead of mastering the intricacies of deep thesaurus- driven evidence-based multilfile searches, why not invest some time instead in telling a research librarian what you want, and then get him or her to do the job. Physicians are physicians and not knowledge managers.

Finally, remember that WGO/OMGE runs a free help desk for "remote" gastroenterologists searching for clinical or research information. E-mail WGO/OMGE's "Ask a Librarian" service at www.omge.org.

Happy searching – and thanks to the American taxpayer for providing us all with PubMed.

References and Further Reading
1. PubMed/Medline: www.pubmed.org
2. Where to get help/NLM Publications on PubMed:
   • PubMed Help Manual
   • Tutorial
   • NLM PubMed Training Manuals
   • NLM Technical Bulletin- Articles about PubMed
3. Evidence-based emergency medicine. How to find evidence when you need it, part 1: databases, search programs, and strategies:
4. How to find evidence when you need it, part 2: a clinician's guide to Medline: the basics:
5. How to find evidence when you need it, part 3: a clinician's guide to Medline: tricks and special skills.
6. How to find evidence when you need it, part 4: Matching clinical questions to appropriate databases:
7. WGO/OMGE's "Ask a Librarian" desk: www.omge.org; click on "global guidelines" and then on "Ask a librarian" in the left-hand navigation bar.

Drs Justus H. Krabshuis
Highland Data
'Les Charleix'
24390 Tourtoirac,
France
E-mail: justus.krabshuis@highland-data.com