Searching Healthcare Databases
NHS Athens

https://hdas.nice.org.uk

May 2017
# Searching the Evidence

## Searching Healthcare Databases

**NHS ATHENS:**

**www.evidence.nhs.uk**

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To help you use this guide:

- indicates a step in the process of searching and retrieving articles.
- indicates a tip, or an extra piece of information.

May 2017
1. Introduction

You will need an **NHS Athens username and password** to use the nine databases that make up this resource\(^1\). You can self-register for an NHS Athens account at [www.evidence.nhs.uk](http://www.evidence.nhs.uk) (click “Journals & Databases” and “register for Open Athens”).

**When to use these resources**

Search the healthcare databases to:

- find specific information on a topic or combination of topics
- answer a clinical query
- undertake a literature search
- find work by a particular author
- search or browse a particular journal

The databases (listed overleaf) contain references, often with summaries or abstracts, of articles that have been published in journals. Information may also be included from guidelines, dissertations, and book chapters.

Where a **full text** copy of an article is available a link will be displayed from the reference and you will be able to download the article **free of charge**.

If a full text copy of an article is not available electronically, it may be available in your local NHS library. If it isn’t, your local NHS library should be able to obtain a copy for you via their inter-library loan service.

Your search topic will determine how to search and which databases to use. You may find that just a basic search across a variety of databases will give you good enough results for your needs. However, for most healthcare topics and for a search to support evidence based practice, you will need to do an Advanced Search. **It is advisable that you search in more than one database and that you search each database individually.**

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\(^1\) Without an NHS Athens account, you can search PubMed and Biomed Central databases, but you will not access full text articles.
1.1 The Healthcare databases:

**Allied and Complementary Medicine (AMED) 1985** -
This covers occupational therapy, physiotherapy, rehabilitation, plus alternative medicine: acupuncture, chiropractic, homeopathy, yoga, hypnosis, etc. It includes over 400 British and European journals.

**British Nursing Index (BNI) 1992** -
This UK-focused database contains articles from over 250 key English language nursing and midwifery journals.

**Cumulative Index of Nursing & Allied Health (CINAHL) 1981** -
A US database covering all aspects of nursing and allied health. It contains materials from over 1,200 journals, theses and pamphlets.

**EMBASE 1974** -
With particular emphasis on European sources, this database covers the whole field of medicine. Drugs, pharmacology and substance abuse are particularly well covered using 5,000 journals, about 1,500 not used in Medline.

**Health Business Elite 1922** -
This database covers journals detailing all aspects of health care administration and other non-clinical aspects of health care institution management.

**HMIC 1979** –
This comprises the Department of Health and Kings Fund databases. Both cover UK NHS health services management, policy and standards and social care and include details of reports as well as journal articles.

**MEDLINE 1946** -
This is a large US database of medical information. Other subjects covered include dentistry, veterinary medicine, medical psychology, genetics and advanced nursing practice. The database covers over 5,000 journals from 70 countries.

**PsycINFO 1806** -
Subjects covered relate to clinical, social and biological areas of psychology. Published by the American Psychological Association, material is included from 2,000 international periodicals.
2. Searching

2.1 Getting Started

Go to: www.evidence.nhs.uk

Click the “Journals & Databases” link.

Click “Begin a search” in the Healthcare Databases Advanced Search (HDAS) box.

Click on Login for all databases.

Enter your NHS Athens username and password in the LOG IN box

You will then be taken to the Healthcare Databases Advanced Search and the list of databases.

You can select more than one database to search – however to get best results and make the most of a databases individual functions it is advisable to select and search one at a time.

Select (tick) a database and you are ready to begin your search.

2.2 Searching – Keywords or Thesaurus Searching?

Most databases allow you to perform a keyword or thesaurus search, or even a mixture of the two. If you are new to searching, try a term search first on your topic.

A Keyword search (sometimes also called “Textword”) will search in the article’s title or abstract for the word(s) you type. It only finds the exact words you use, so you need to think carefully about your search words.

A thesaurus search will find your topic's correct thesaurus term or descriptor, and will ensure your results are about the subject you have chosen, not just mentioned. Thesaurus searching is covered in Section 2.5 on Page 11.
2.2.1 Planning your search

Before you begin your search it is a good idea to think about your search question and the keywords you plan to use.

To perform a Keyword search on the following topic:

Is the flu vaccine effective in reducing sick leave for healthcare staff?

First, break down your search question into its main concepts or topics. For example, for this search question we will search for:

- Healthcare staff
- Flu vaccine
- Reduced sick leave

For each of these topics make a list of synonyms, US variations in terminology or spelling, plurals and any other variations you can think of.

E.g.:
- Healthcare staff / healthcare worker(s) / healthcare professional(s) / healthcare personnel
- Flu / influenza / vaccine(s) / vaccination(s) / immunisation(s) / immunization(s)
- Sick leave / time off work / absent / absentee / absenteeism

Phrase Searching:

If you want to search for a distinct phrase put it in quotation marks e.g. “healthcare worker”. This will instruct the database to find only those words next to each other in that order. Otherwise the search will be e.g. healthcare AND worker

Truncation

Adding an * at the end of the word ensures the database also finds plurals and variations in word ending. For example, worker* will find both worker and workers.

2.3 Searching with Keywords

Enter your first keyword “healthcare staff” in the text box and click “Search”. The default search is “Title and abstract”. You can select more fields if you want a broader search.

Your search and results are now displayed in the Search History:
Now type your next alternative term: “healthcare worker*” (adding the * to find workers as well) and click "Search".

Your results will be displayed in the Search History (No. 2):

<table>
<thead>
<tr>
<th>Database(s)</th>
<th>Search Term</th>
<th>View Results</th>
<th>Edit</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 1 Medline</td>
<td>(“healthcare staff”).ti,ab</td>
<td>View Results (1,002)</td>
<td>Edit</td>
</tr>
<tr>
<td>☐ 2 Medline</td>
<td>(“healthcare worker**”).ti,ab</td>
<td>Viewing (6,344)</td>
<td>Edit</td>
</tr>
<tr>
<td>☐ 3 Medline</td>
<td>(“healthcare personnel”).ti,ab</td>
<td>View Results (1,059)</td>
<td>Edit</td>
</tr>
<tr>
<td>☐ 4 Medline</td>
<td>(“healthcare professional”).ti,ab</td>
<td>Viewing (1,345)</td>
<td>Edit</td>
</tr>
</tbody>
</table>

Search in this way for any other alternative terms for this topic: “healthcare personnel”, “healthcare professional**”, etc.

Your search screen will look like this:

<table>
<thead>
<tr>
<th>Database(s)</th>
<th>Search Term</th>
<th>View Results</th>
<th>Edit</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ 1 Medline</td>
<td>(“healthcare staff”).ti,ab</td>
<td>View Results (1,002)</td>
<td>Edit</td>
</tr>
<tr>
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<td>(“healthcare worker**”).ti,ab</td>
<td>View Results (6,344)</td>
<td>Edit</td>
</tr>
<tr>
<td>☐ 3 Medline</td>
<td>(“healthcare personnel”).ti,ab</td>
<td>View Results (1,059)</td>
<td>Edit</td>
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<tr>
<td>☐ 4 Medline</td>
<td>(“healthcare professional”).ti,ab</td>
<td>Viewing (1,345)</td>
<td>Edit</td>
</tr>
</tbody>
</table>

So far, all your searches are separate. We now need to connect them using **Boolean Operators**.

**Boolean Operators**

These are words used by databases and search engines to combine your subjects together.

**OR** will search for ANY of the subjects you choose within an article. Use OR to combine synonyms, alternative spellings or related terms.

**AND** will search for articles that contain ALL the subjects together.

To find results discussing any of these topics, click in the boxes next to the results, select: “OR” from underneath the search history, and click "Combine".
The results below are references containing any of your keywords.

Now follow the same procedure for each of your other keywords.

E.g. Search for influenza vaccine and its alternative terms, and then sick leave and its alternative terms. Your screen will now look something like this:

Now to find articles containing all three subjects together we combine them using Boolean operator AND.

Select (tick) each combined search result (E.g. search 5, 10 and 14 in the screenshot). Select "AND" and click "Combine"
Your final search result now contains articles mentioning all 3 subjects together.

What to do next:
- View your search results: go to Section 2.4 "Dealing with your Results" below.
- Narrow down the number of results: go to Section 2.6 “Limits – how to narrow down your search” on page 14.

2.4 Dealing with your results

To view the results of this search scroll down the page, to view the results of a previous search click on View Results (xxx) on your search history.

Click on a title to view an ABSTRACT if there is one. Click “Show Abstracts” to see abstracts for all your results.

You can sort by Publication Date, & change the number of items displayed on the page.

Click on the title of a reference to see an abstract (if there is one). To return to the list of results click “Back to Results” at the top of the screen.
Some articles may be available as full text straight away from an e-journal supplier (e.g. BMJ publishing, Proquest, Elsevier ScienceDirect, etc). If this is the case, there will be blue links to the e-journal supplier at the bottom of the reference.

In some cases there will be more than one full text link. Click on a link to go to the article.

![Influenza immunisation: attitudes and beliefs of UK healthcare workers](https://example.com/article.png)

Sometimes a PDF of the article will load automatically, or you may need to select a PDF link.

**Influenza immunisation: attitudes and beliefs of UK healthcare workers**
Julia Smedley, Jason Poole, Eugene Waclawski, Anthony Stevens, John Harrison, John Watson, Andrew Hayward, David Coggon

*Occup Environ Med* 2007;64:4 223-227 Published Online First: 20 December 2006
doi:10.1136/oem.2005.023504

[Abstract] [Full text] [PDF]

On some occasions, clicking the blue full text link may not take you directly to the article, and you may be presented with a log-in screen. As you have already logged in with Athens you do not need to login again!

Look around the screen for a "Login with Athens" link and click it. This may be quite small, and for some journals located at the top right of the screen. This should then allow you access.

There are over 2000 free online journals available full text, which have been purchased for you by NHS England or your local NHS Library service. Your NHS Athens username and password gives you direct access to these journals via the database links or by clicking the “Find a Journal” link on EEL (http://www.eel.nhs.uk)

Some items in your list may say they are available from a local NHS Library.

If there is no full text link, or local availability, please contact the Medical Library for help in obtaining the article.
To select references for printing, saving or emailing, click in the box to the left of a reference to “tick” it. Move through the pages of results using the arrow (or page numbers) at the top and bottom of the page.

Once you have selected references, click on “Add n to Saved” (n is the number of articles to save) at the bottom of each page before moving to the next page. If you move to the next page without saving you will lose your previous selections.

To export your results, scroll up to your search history, select the required line then select “Export Options”.

Select your desired display options which are displayed in the “Export Options” box. To export to a reference manager e.g. Endnote select RIS as the Output Format.
2.5 Searching – Using the Thesaurus

A keyword search, whilst useful, does not always retrieve the most focused results. You may find you retrieve articles that mention your topics, but your topics are not the subject of the article. You may miss important articles on your topic because you are relying on guessing the words used by the author!

To get better results, searching the thesaurus is recommended. This enables you to map your search term to the indexed vocabulary for the particular database you are searching. This means you should retrieve articles that are about your topic, and will also incorporate synonyms and plurals without you typing them.

We will now try our healthcare staff, flu vaccine and sick leave search again using the thesaurus.

Enter your first search term (e.g. "influenza vaccine") and click the "Thesaurus" button.

Terms that match the concepts of your keyword search will then be displayed. You may find you have an exact match for your keyword or you may have a choice of terms.

Click on the heading which best matches your requirements. Once you have chosen one you can click “Select” to choose one or more subjects at this point and click on “Search Now” (which appears at the top of the screen). You could choose from any of the other options: “Explode”, “Major” or “Subheadings”. Each of these features is described below. You can also view the “Scope” which in most cases will give you a definition of the subject.
Subheadings: It is possible to break down some thesaurus terms into subheadings. These enable you to focus your search even further. To view the Subheadings attached to a thesaurus term, click on the “Subheadings” next to the term you are interested in. A list of subheadings will appear. You can select as many as you wish from the list, or none at all if you want to incorporate all aspects of the subject in your search.

You can select **Major** if you wish your search to retrieve only articles where the subject matter is predominantly that of your chosen thesaurus term.

**Explode** will expand your subject by searching for your term plus any related and narrower terms listed (indented) below. Click on your selected topic to view its place in the thesaurus “tree” where it appears next to closely related terms.

If you search for “Health Personnel” in the thesaurus you will see the term in black, in this example “Health Personnel is the “broader” term. The terms underneath it which are indented are the “narrower” terms (Allied health personnel, Anatomists etc). If you choose “**Explode**” next to Health Personnel your search will include all these narrower terms. This is useful as we are interested in the flu vaccine with any type of healthcare staff.

If your search term doesn’t match a thesaurus term you can either
- Search for your search term as a keyword not a subject or,
- Search the thesaurus with a different synonym
The numbers which appear next to the subject heading relate to an aspect of the heading. The list of headings is hierarchical with broad categories narrowing down to more specific terms. In this example the topic comes under two Broad headings which can be seen at the top of the screen. The twenty-three Narrow headings are more specific terms which come under this term and are displayed below it on the screen. Sibling terms are any other terms listed under the same broader terms at the same level in the hierarchy but don’t appear in all databases. Used For shows you synonyms for the selected term and are displayed at the bottom of the screen. A Related term is one in which you might also be interested.

Repeat thesaurus mapping for each of your subjects. The thesaurus terms will be displayed in the Search History. You can then combine them as you did your keyword search, and view results.

Please note, not all the databases support thesaurus options.

It is worth noting that some databases will add an article, and then add thesaurus terms to that article at a later date. This could mean a thesaurus-only search does
not find recently added articles. Therefore, for a comprehensive search, a combination of keywords and thesaurus searching is recommended.

2.6 Limits – How to Narrow Down your Search
You may wish to "limit" the number of search results retrieved, either because you have found too many, or because you are only interested in articles that meet your pre-defined criterion (e.g. within a certain date range, English only, or to do with a certain age group, etc.)
Some of the databases have menus of "limits" you can select from.

You may apply as many limits to your search as you wish, but remember the more you choose the fewer results you will find!

To apply any relevant limits to your search results, enter the row number in the search box, tick the limits box and select the required limits. Click on “Adding” to run the search.

2.7 Being thorough
If you wish to do a thorough literature search, and try to ensure you do not miss any relevant results, you can continue your search using a different database.

To do this, select which lines you want to rerun. Click on “Rerun Searches” and select the database you want to rerun your search in. Click on “Rerun Selected” to run the search.
15

Re-running a search will only work if you have done a keyword search (section 2.3) and even then, look carefully at your results. If you have applied any limits to your search (section 2.6) they may not work in the new database you have chosen. You will need to recombine any searches that you have rerun.

If you wish to repeat a thesaurus search, it is advisable to "continue" with a new database (rather than "Re-run") and do your search again using thesaurus searching as in section 2.5

3. Saving Searches

To save your search so that you can run it again at a later date, give the search a meaningful name in the box above the search history and click “Save Strategy”.

To retrieve a saved search, click “Saved Searches” from the top of the search screen. Click on the search name you want to retrieve and the search will appear in your search history

You can also delete a search, and Create Alert (Section 4).

4. Creating Alerts

An Alert will automatically run your search each time the database is updated, and email you new results that match your search strategy.
To create an Alert, you first need to save your search and retrieve it as in Section 3 (p 15).

An alert can only be created on searches run in one database. If the search can’t be saved a bell will not appear on that row. To create the alert click on the bell on the required row.

On the following alert screen, you will notice that the row has turned yellow to indicate an alert is being set up. From the options select the frequency of the alert, the format and whether references should be short, medium or full. Enter an email address and give the alert a name then click on Save.

5. Author and Journal Searching

You can construct a search to retrieve articles by particular authors or those that have been published in particular journals.

Type the author’s name in the following way:
- "kendrick k*" if you know a first initial (the * will pick up any other initials)
- "kendrick km" if you know all initials
- “kendrick**” if you do not know any of the author’s initials.
- Make sure you use the quotation marks, and deselect “Title and Abstract” and tick “Author”:
To search by **journal**, select Journal Name and key in the journal title with quotation marks:

You can combine any of these searches with a topic search if this would be appropriate for the information you wish to retrieve.

### 6. Search tips – Recap

<table>
<thead>
<tr>
<th><strong>Truncation / Wildcard</strong></th>
<th><strong>Symbol</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- finds alternative word endings &amp; plurals</td>
<td></td>
</tr>
<tr>
<td>Normal wildcard/ Unlimited truncation: Can represent 0 or many characters</td>
<td>*</td>
</tr>
<tr>
<td>Limited truncation: number (n) specifies the maximum characters after it</td>
<td>*n</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Boolean Operators</strong></th>
<th><strong>Symbol</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- combines results of searches</td>
<td></td>
</tr>
<tr>
<td>Find results containing ALL words together</td>
<td>AND</td>
</tr>
<tr>
<td>Find Any one or more of these words</td>
<td>OR</td>
</tr>
<tr>
<td>Remove a keyword or subject from your search</td>
<td>NOT</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Phrase Searching</strong></th>
<th><strong>Symbol</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>- in the same order</td>
<td>&quot;keywords together&quot;</td>
</tr>
<tr>
<td>Words within the specified number of words (n) of each other, in any order</td>
<td>ADJn</td>
</tr>
</tbody>
</table>

| 7. Troubleshooting |

Searching for literature can occasionally lead to unsatisfactory results. There are generally two types of problem that may be encountered:

- Too many irrelevant articles in the search result
- Too few relevant articles generated by the search.

Ideally when carrying out a literature search the results should find all of the articles which are relevant to the question, while excluding any article which is not relevant.
7.1 Too Many Irrelevant Articles

If the search results contain a large amount of irrelevant articles try:

- Using the thesaurus (Section 2.5) and using subheadings and major descriptor to focus your search.
- Using the NOT command to exclude a concept which is not wanted. Use only if results have a strong bias towards a topic that you do not want at all as you may remove some useful information.
- Searching for phrases using “ “. Just ‘Mental Health’ without quotation marks “ ” would generate irrelevant hits because it would include results for the words mental and health in any order in the title or abstract.
- Think of more precise keywords that can be used/added to the search.
- Using the limits, such as limit to geographical location, age group, or publication date
- Search by ‘Title’ rather than ‘Title and Abstract’ or ‘Any Field’
- Using the combine search option to fine tune your search.

7.2 Not Enough Useful Articles

If the search results do not contain enough useful articles try:

- Alternative spelling – Use the American and British spelling of a word (for example gynaecology or gynecology).
- Different synonyms – try using alternative words or phrases to describe your search topic/concept. For example, try ‘bandage’ as an alternative to ‘dressing’ as a search terms.
- Using the Explode feature if you use thesaurus terms.
- Find more relevant thesaurus terms by looking at those given to articles you have found – have you missed any?
- Searching an alternative database. For example switch from Medline to EMBASE or CINAHL.
- Widening your search – your search may contain too many words and phrases. Try removing one of the search terms or limits.
- Using the OR command (for example ‘wound care’ OR ‘wound management’).
- Truncation – Use the * command to give suffix variations (for example, ‘bandag*’ will find bandage, bandages, and bandaging).
- Using the search ‘in any field’ or ‘in title and abstract’ options.

Note: If you are searching for results in a new area of research there may be few published articles.

8. Removing Duplicates

You are able to remove duplicate results from your searches when you have searched across multiple databases.
- Save the required results by “Adding to saved”.
- View the saved results which appear above the search history.
- The number of duplicates found will be displayed.

98 saved results on search strategy: 89269
5 of your saved results have duplicate entries.

Viewing all results. View only the 5 results with duplicate entries
Click on “View only the n results with duplicate entries”

You can now select which duplicates are to be deleted by ticking them and clicking on “Delete Selected”.

You can only remove duplicates from results if the combined results of the searches you select totals less than 500.

9. Help and Training

For further help or to arrange a training session, please contact:

Isla Kuhn, Eleanor Barker, or Veronica Phillips
Cambridge University Medical Library

Email : librarytraining@medschl.cam.ac.uk
Phone : (01223) 336750
Web : http://library.medschl.cam.ac.uk