Guide to Literature Searching

Introduction

The key to a good literature search is planning. To undertake a really effective search you need to understand exactly what it is you want to get out of it, even before you sit down at a computer. There are two things you need to know before you can begin your search:

1. What are you searching for?
2. Where are you most likely to find this information?

The answers to these two questions make up your Search Strategy.

A sample proforma for developing a search strategy is included in Appendix One.

If you ever need assistance with a literature search please contact your Library staff.

Access to an extensive list of resources including full text journals and on-line databases is free to all SA Health staff through the library via the web link: http://www.salus.gov.au

You will need to register for a SALUS password to access these resources, but once you have a password you may access these resources from work or home.

What are you searching for?

There are 3 stages to this task. You might find it helpful to use the literature search strategy sheet at the end of this document.

Stage One

The first stage of any search is to clarify exactly what it is you are looking for. You may find it useful to write this down as a single sentence question or description of the information you would like to find. Be fairly specific at this stage, because this question or sentence will form the basis for developing your strategy.

Stage Two

Once you have your search question, you need to start breaking it down into search terms. There is a mnemonic that can assist you to do this.

PICO

PICO is useful for medical questions and for topics where one thing is being compared with another.

- Patient/Population
  This is the “Who”. For this you need to think of age, sex, ethnic origins or other defining characteristics of the patient and the population.

- Intervention
  This is also sometimes known as exposure, and makes up the “What”. This is what is
happening to the patient or population, so it could be a drug or a therapy, a screening questionnaire or a health improvement programme.

- **Comparison**
  With what is the intervention (or indeed population) being compared? This could be a control group.

- **Outcomes**
  What outcome do you expect to see? For example, you may be interested in knowing whether an intervention has a health benefit, or whether an exposure results in mortality.

**Stage Three**

**Key Words**

Once you’ve broken your search question down into the PICO headings you can then start to pull out the key words or terms which you are going to use for your search. In order to get every article that is applicable to your search you need to make the search as sensitive as possible. However, if you only want a few articles that address the question you ask then you want to make the search as specific as possible. You would use slightly different search terms for each.

- **Sensitive Search**

  For a sensitive search you need to think of all the possible ways an author or an indexer might describe each of your key words in phrases. You might find it useful to check with a medical thesaurus or a list of subject heading such as MESH (Medical Subject Headings). The MESH heading can be found at this link - [http://www.nlm.nih.gov/mesh/MBrowser.html](http://www.nlm.nih.gov/mesh/MBrowser.html)

  The more alternative terms you use the more results you will get from the search.

- **Specific Search**

  For a specific search you want to use only terms that relate directly to your question, so you would use only one (or at the most two) way to describe each search term. You may need to check with the MESH, as with the databases own thesaurus, to ensure that the terms you are using are the terms the indexer would use.

  In a specific search, you would apply more **Limits**. Limits are search terms such as language, age of article, journal title, article type or limits on the populations such as age, gender, ethnic group etc.

  You can limit articles by using the operator **NOT** to exclude certain terms, for example you could search for stress but NOT stress fractures.

  The more limits you apply to a search the fewer results you will get from that search.

**Where are you most likely to find this information?**

Different databases have different specialties, so running a search on one database may be more successful than running the same search on another database.
As a general guide, the databases that are used most regularly for literature searches are:

- Medline / Pubmed
- All EBM Reviews (includes Cochrane Library databases)
- EMBASE
- Clinical Key Nursing
- CINAHL
- Proquest Nursing & Allied Health
- UpToDate
- Clinical Key
- Trip database

**Applying your search strategy**

Once you have decided on your search terms and where to search, you can finally apply your search strategy on a database.

It is good practice to enter each term separately and to combine them afterwards. That way you can see which search terms are more commonly used, and where you may need to consider using a different word or phrase when one term has very few results.

**Entering Search Terms**

There are two important things you need to know about entering search terms.

1. Subject headings and Keywords searches

   - **Subject Headings**

     Subject headings are used by the databases to index articles into categories as subjects. An article may be given more than one subject heading, but will only be given subject headings which relate to the main purpose or subject of the article. The subject heading may not appear as a word or phrase in the article.

   - **Keyword Searches**

     Keyword searches tell the database to look for a specific word or phrase that appears in the article title or abstract.

     Keywords are much broader than subject headings and will return articles where the search term is not the main purpose or subject of the article.

     Keywords are useful when you need to make a search more sensitive.

2. Combining Search Terms

Once you have entered all the search terms you than need to combine them. We use something called “Boolean Logic” to combine terms, which you may know better as AND, OR or NOT.
**OR** will combine search terms by finding articles that mention any of the search terms used. For example, if you search for:

“Cat **OR** Dog”

all the articles that mention “cats” and all the articles that mention “dog” will be returned, even if the article only includes one of the search terms used.

**OR** is most useful when you are combining related or alternative terms as part of a sensitive search strategy.

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**AND**

**AND** combines your search terms by only finding articles that mention all of your search terms. For example searching on:

“cat **AND** dog”

will only find articles that mention both cats and dogs. It will not find articles that mention only cats but not dogs or dogs but not cats. Both terms have to be mentioned in the articles for the article to be included in the results.

And is most useful when you are combining different terms in a search.

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**NOT**

**NOT** isn’t available in all search engines, but it’s useful to know about it anyway. **NOT** will eliminate terms from your search. For example, you might want to find an article about cats and dogs, but not mice. You could search on:

“(cat AND dog) **NOT** mice”

This will find all the articles that mention both cats and dogs, but not those that also mention mice.

**NOT** is most useful for focussing the results of your search. You would use **NOT** to eliminate terms you do not want to include in your results.

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**The End – Or is it?**

Once you’ve combined all your search terms you should have the results you need to answer the question you posed yourself at the start. However, sometimes you might find
you have too many or too few results (or even none at all!). When this happens you need to review your search strategy.

If you have too many results you probably need to impose more limits. Think about whether you want to restrict your results to a particular language, type of article, age range, or even to a restricted time period (e.g. the last 5 years).

If you have too few results you need to think of other ways to phrase your search, or you might need to take out a few search terms. Think about which terms are most important to your search, and think of other ways to say them. If after entering all the terms you can think of, or even searching on just one word, you still have too few or no results then you have probably found everything that is available through the databases.

APPENDIX 1

LITERATURE SEARCH STRATEGY

Title for Article:

Key Words

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Other Search Terms:

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Search Engines Used:

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Notes:

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Undertaken by: ____________________________
Date: ____________________________