Platforms under the microscope: a checklist to help identify the best database provider for systematic literature searching

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INTRODUCTION

- Introduction
- Project aims
- Systematic review searching
- Project method
- The checklist
- Results
- Questions/Suggestions
Key role of an Information Specialist within PenCLAHRC

- Design search strategies for systematic reviews
- Understand how individual databases and their hosts work in order to conduct the best searches
- Run often complex searches across different databases to obtain the best evidence
To design a checklist of criteria necessary for carrying out SRs on electronic databases

To test the checklist

To raise awareness of issues
Reason for the project

- Not all platforms cope well
- Hosts gaining sole rights to some crucial databases
- Risk of losing data
- Loss of ability to reproduce search
- Little knowledge of these issues among decision makers
- Selection of databases according to ease of searching/functionality of platforms - bias?
Searches for systematic reviews

- Can be complex
- Should be reproducible
- Should aim for high sensitivity and high precision
Example of a systematic search

Database: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) <1950 to Present>
Searched: 26-11-10

1. (open access adj5 (follow up* or followup*)).ti,ab. (15)
2. (open access adj5 (check up or checkup or check ups or checkups)).ti,ab. (0)
3. (open access adj5 appointment*).ti,ab. (18)
4. (open access adj5 (clinic or clinics)).ti,ab. (88)
5. (open access adj5 (out patient* or outpatient*)).ti,ab. (19)
6. (Patient* adj5 direct access).ti,ab. (106)
7. (Patient* adj3 initiate* adj5 (follow up* or followup*)).ti,ab. (44)
8. (Patient* adj3 initiate* adj5 (check up or checkup or check ups or checkups)).ti,ab. (0)
9. (Patient* adj3 initiate* adj5 appointment*).ti,ab. (5)
10. (Patient* adj3 initiate* adj5 (clinic or clinics)).ti,ab. (10)
11. (Patient* adj3 initiate* adj5 (out patient* or outpatient*)).ti,ab. (18)
12. (Patient* adj3 led adj5 (follow up* or followup*)).ti,ab. (20)
13. (Patient* adj3 led adj5 (check up or checkup or check ups or checkups)).ti,ab. (0)
14. (Patient* adj3 led adj5 appointment*).ti,ab. (2)
15. (Patient* adj3 led adj5 (clinic or clinics)).ti,ab. (21)
16. (Patient* adj3 led adj5 (out patient* or outpatient*)).ti,ab. (8)
17. (Patient* adj3 request* adj5 (follow up* or followup*)).ti,ab. (58)
18. (Patient* adj3 request* adj5 (check up or checkup or check ups or checkups)).ti,ab. (2)

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Example of a systematic search cont.

19 (Patient* adj3 request* adj5 appointment*).ti,ab. (28)
20 (Patient* adj3 request* adj5 (clinic or clinics)).ti,ab. (26)
21 (Patient* adj3 request* adj5 (out patient* or outpatient*)).ti,ab. (11)
22 (self* adj1 referr* adj5 (follow up* or followup*)).ti,ab. (13)
23 (self* adj1 referr* adj5 (check up or checkup or check ups or checkups)).ti,ab. (1)
24 (self* adj1 referr* adj5 appointment*).ti,ab. (1)
25 (self* adj1 referr* adj5 (clinic or clinics)).ti,ab. (47)
26 (self* adj1 referr* adj5 (out patient* or outpatient*)).ti,ab. (15)
27 (patient adj5 (led or request* or initiate*) adj5 review).ti,ab. (25)
28 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 (553)
29 "Delivery of Health Care"/ (53544)
30 "Referral and Consultation"/ (44989)
31 Health Services Accessibility/ (39281)
32 outpatient clinics, hospital/ (13274)
33 29 or 30 or 31 or 32 (143984)
34 28 and 33 (161)

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Design and search process

Receive topic

Scoping searches

Key References

Key terms

Review team

SEARCH STRATEGY

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Compulsory tasks in search process

- Build up searches over time
- Capacity for many lines of terms or extremely long search strings
- Download large amount of data
METHOD

- Search for similar work
  Consultation between IS’s

- Determine criteria

- Produce checklist

- Test platforms
  Refine Checklist

- Retest platforms

- Assign scores

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Checklist (1)

- Three platforms:
  - OvidSP
  - ProQuest
  - EBSCOHost

- Scoring:
  - 3 available and works well
  - 2 available but harder to use/find
  - 1 not available or doesn’t do what you think

- Essential vs desirable

- Tested independently

- Results collated

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## Checklist (2)

<table>
<thead>
<tr>
<th>No</th>
<th>Criteria</th>
<th>Example</th>
<th>E/D</th>
<th>Available Y/N</th>
<th>IS Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Searching (functions)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.01</td>
<td>Command line searches</td>
<td></td>
<td></td>
<td>E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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## Checklist (3)

### Searching (syntax)

<table>
<thead>
<tr>
<th>Term</th>
<th>Type</th>
<th>Function</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boolean terms</td>
<td>E</td>
<td>Phrase searching</td>
<td>E</td>
</tr>
<tr>
<td>Adjacency terms</td>
<td>E</td>
<td>Proximity terms</td>
<td>E</td>
</tr>
<tr>
<td>Right truncation</td>
<td>E</td>
<td>Left truncation</td>
<td>D</td>
</tr>
<tr>
<td>Single character truncation</td>
<td>D</td>
<td>Masking within a word</td>
<td>D</td>
</tr>
<tr>
<td>Parenthesis</td>
<td>E</td>
<td>Combining parentheses within strings with Boolean</td>
<td>E</td>
</tr>
<tr>
<td>Combining parentheses within strings with adjacency</td>
<td>E</td>
<td>Combining parentheses within strings with proximity</td>
<td>E</td>
</tr>
</tbody>
</table>
## Checklist (4)

### Searching (syntax)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Combining parentheses with single field codes</td>
<td>E</td>
<td>Combining parentheses with multiple field codes</td>
</tr>
<tr>
<td>Short cut to combining strings with AND/OR (e.g. OR/1-10)</td>
<td>E</td>
<td></td>
</tr>
</tbody>
</table>

### Field codes

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Available to use</td>
<td>E</td>
<td>Easily accessible</td>
</tr>
<tr>
<td>Ability to combine (e.g. ti,ab)</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Controlled vocabulary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Subject headings e.g. MeSH</td>
<td>E</td>
<td>Thesaurus available (displayed in hierarchy)</td>
</tr>
<tr>
<td>Ability to choose multiple terms from the thesaurus</td>
<td>D</td>
<td>Ability to combine controlled vocabulary terms with free-text</td>
</tr>
<tr>
<td>Ability to explode headings</td>
<td>E</td>
<td>Ability to choose a narrower term</td>
</tr>
<tr>
<td>Scope note available</td>
<td>E</td>
<td></td>
</tr>
<tr>
<td>Display (Search)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option to view search history while using search screen</td>
<td>E</td>
<td>Build up searches line-by line with the number of hits visible for each string</td>
</tr>
<tr>
<td>Ability to edit previous lines of searches as it develops</td>
<td>D</td>
<td>Ability to insert new lines of search into existing search</td>
</tr>
<tr>
<td>----------------------------------------------------------</td>
<td>---</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>Ability to move search lines around within search</td>
<td>D</td>
<td>Combine searches (with Boolean?)</td>
</tr>
<tr>
<td>Renumber searches after deletion</td>
<td>D</td>
<td>Refine search by update code</td>
</tr>
<tr>
<td>Display (Records)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Option to choose fields to display</td>
<td>D</td>
<td>Option to change the number of hits viewed per page</td>
</tr>
<tr>
<td>Option to view search history on record display screen</td>
<td>E</td>
<td>Ability to choose records and not lose this choice when you move onto the next page</td>
</tr>
</tbody>
</table>
# Checklist (7)

<table>
<thead>
<tr>
<th>Can move onto next record when in full record display</th>
<th>D</th>
<th>Search term highlighted</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Downloading</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select all results from complete set of records rather than page-by-page</td>
<td>E</td>
<td>Able to download large numbers of records (500+) in one go</td>
<td>D</td>
</tr>
<tr>
<td>A wide choice of export/download options</td>
<td>E</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Search History</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can save search history</td>
<td>E</td>
<td>Can share saved searched</td>
<td>D</td>
</tr>
<tr>
<td>Export search history</td>
<td>D</td>
<td>Edit saved searches</td>
<td>E</td>
</tr>
<tr>
<td>Re-run saved searches</td>
<td>E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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## Checklist (8)

<table>
<thead>
<tr>
<th>Performance</th>
<th></th>
<th>Performance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Can handle long and complex searches, &gt;50 lines long</td>
<td>E</td>
<td>Can handle large numbers of records &gt;1000</td>
<td>E</td>
</tr>
<tr>
<td>Is compatible with major reference management systems</td>
<td>E</td>
<td>Compatible with major web browsers: IE, Firefox and Google Chrome</td>
<td>E</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other</th>
<th></th>
<th>Other</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Help facility is easy to locate and informative</td>
<td>E</td>
<td>Results are consistent</td>
<td>E</td>
</tr>
<tr>
<td>Turn off any deduplication</td>
<td>E</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results (1)
## Results (2)

<table>
<thead>
<tr>
<th></th>
<th>Platform 1</th>
<th>Platform 2</th>
<th>Platform 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All criteria</strong></td>
<td>3 = 76%</td>
<td>3 = 39%</td>
<td>3 = 44%</td>
</tr>
<tr>
<td></td>
<td>2.5 = 7%</td>
<td>2.5 = 14%</td>
<td>2.5 = 11%</td>
</tr>
<tr>
<td></td>
<td>2 = 7%</td>
<td>2 = 14%</td>
<td>2 = 16%</td>
</tr>
<tr>
<td></td>
<td>1.5 = 6%</td>
<td>1.5 = 13%</td>
<td>1.5 = 7%</td>
</tr>
<tr>
<td></td>
<td>1 = 4%</td>
<td>1 = 20%</td>
<td>1 = 22%</td>
</tr>
</tbody>
</table>

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Results (3)

Those where all platforms scored 1 or 1.5:

- Ability to insert new lines of search into existing search
- Ability to move search lines around within search
- Option to choose fields to display
Those where 2 of the platforms scored 1 or 1.5:

- Select all results from complete set of records rather than page-by-page
- Can save search history
- Can handle long and complex searches, >50 lines long
- Can handle large numbers of records >1000
Sum up

- Work in progress!
- Scoring
- Learning/training issues?

- Inform decision making process
  - Platform developers
  - Databases
  - Institutions
Questions/Suggestions