Sample PubMed Search

Frame the Research Question using PICO:
Is the incidence of ventilator associated pneumonia decreased by a higher nurse-patient ratio?

- **P**atient/Problem:
  - ventilator-associated pneumonia

- **I**ntervention:
  - higher nurse-patient ratio

- **C**omparison:
  - Fewer staff; lower ratio; other antiseptic measures

- **O**utcome:
  - reduced infection
Is the incidence of ventilator associated pneumonia decreased by a higher nurse-patient ratio?

- **Patient/Problem:**
  - ventilator-associated pneumonia
- **Intervention:**
  - higher nurse-patient ratio
- **Comparison:**
  - Fewer staff; lower ratio; other antiseptic measures
- **Outcome:**
  - reduced infection

**TIP:** Consider **Patient/Problem** and **Intervention** first when planning your search strategy and selecting database search terms.

[look for the **Comparison** and **Outcome** when you browse abstracts and review full text of articles]
Select a specialized database

From the libraries home page, [http://library.nyu.edu/](http://library.nyu.edu/) select Articles via Databases, then choose a database from the A to Z list, or from the Popular Databases
Widely recognized as the premier source for bibliographic and abstract coverage of biomedical literature. Encompasses information from Index Medicus, Index to Dental Literature, and International Nursing Index, as well as other sources in the areas of allied health, physical therapy, health education, biological and physical sciences, humanities and information science as they relate to medicine and health care, communication disorders, population biology, and reproductive biology. More than 16 million records from more than 5200 journals are indexed. PubMed is the freely available version of MEDLINE.

From the Databases A-Z list, select: PubMed
Ventilator associated pneumonia  AND  nurse patient ratio

Consider **Patient/Problem** and **Intervention** first when planning your search strategy and selecting database search terms.
Search steps schematically…

- Ventilator associated pneumonia
- Nurse patient ratio

The **AND** connector narrows a search. BOTH search terms must be in the retrieved records.
Search steps schematically...

Only 8 initial results...

Ventilator associated pneumonia

nurse patient ratio

AND

See 1 article found by title matching your search:


Results: 8
Improve your database search results:

• Use the online thesaurus to translate your search terms into standardized terms. Each database has an online thesaurus of controlled vocabulary terms (e.g., MeSH Medical subject headings in PubMed).

• Truncate one or more of your search terms (diab* retrieves diabetes, diabetic, diabetogenic, etc.)

• Harvest added search terms (synonyms for one or more of your search terms) by viewing the records retrieved in your initial search

• From a relevant article, look for Related articles (the “snowball” approach)

• Follow references in relevant article bibliographies (the “ancestry” approach or “footnote chasing”)

• Use a citation index to go forward in time, follow up on articles that cite the parent article e.g., Web of Science, Scopus, more: http://nyu.libguides.com/content.php?pid=27011&sid=1795796

• Use another database. Expand to databases specialized for the psychosocial aspects of healthcare (PsycINFO, Web of Science).
<table>
<thead>
<tr>
<th>YOUR NATURAL LANGUAGE</th>
<th>PubMed MeSH terms:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>ventilator associated pneumonia</td>
<td>pneumonia, ventilator-associated [MeSH]</td>
</tr>
<tr>
<td>nurse patient ratio</td>
<td>Nursing Staff, Hospital [MeSH]</td>
</tr>
<tr>
<td></td>
<td>Personnel Staffing and Scheduling [MeSH]</td>
</tr>
</tbody>
</table>

For this example you might want to harvest added terms from relevant abstracts. So your expanded search statement might be:

(nurse-to-patient ratio*
  OR
  nurse-patient ratio*
  OR
  Nursing staff, hospital
  OR
  Personnel staffing and scheduling)
A better search combines your terms, MeSH terms, and harvested synonyms:

(nurse-to-patient ratio* OR nurse-patient ratio* OR Nursing staff, hospital OR Personnel staffing and scheduling)
Search steps schematically...

Nurse-to-patient ratio*  Nurse-to-patient ratio*  Nursing Staff, Hospital  “Personnel Staffing and Scheduling”

OR  OR  OR

PubMed Advanced Search

(nurse-to-patient ratio* OR nurse-patient ratio* OR Nursing staff, hospital OR Personnel staffing and scheduling)

Use the OR connector to link synonyms...expand a search, (OR retrieves MORE...) Use the * to truncate

(ratio* retrieves ratio, ratios, rations, rationale, etc.)
You may want to expand each set search, using synonyms...

Can you think of a synonym for ventilator associated pneumonia (to expand the term)?
Search steps schematically…

A better search includes the synonym: **VAP**
CLICK Advanced Search, view your Search History.
Putting it all together…

ventilator associated pneumonia OR VAP

AND

(Nurse to patient ratio* OR nurse-patient ratio* OR Nursing Staff, Hospital OR "Personnel Staffing and Scheduling")

A better search!!
View a sample PubMed/Medline record that meets all the search criteria:


Nursing Staff, Hospital [MeSH term]

AND

Pneumonia, Ventilator-Associated [MeSH term]
Filters: raising the level of evidence: http://tinyurl.com/nyufilter

In all databases, look for the categorical limits feature:

- In **Medline/PubMed**, use **filters** to apply categorical limits, such as age groups, publication types, dates…

**Other databases:**

- In **CINAHLPlus**, limit to Publication type: “research” OR “systematic review” or try the Clinical Queries

- Use **Medline/PubMed** --Advanced Search--“**Clinical queries**” or Medline/Ovid **Additional Limits** button to select from “Clinical queries” (Clinical queries include the ability to search for systematic reviews or limit to a clinical study category. More info at: http://www.nlm.nih.gov/bsd/pubmed_subsets/sysreviews_strategy.html

- In **PsycINFO**, click on **Limit a Search, limit by Methodology**; try using Clinical Queries.

- In **Proquest**, select the **Scholarly journals** checkbox to find only documents from academically oriented journals. Select the **Peer reviewed** checkbox to find only documents reviewed by subject matter experts.
In PubMed, from the results page, select filters to narrow results by Article type, Publication date, Age groups, Language, etc.
Filters for Clinical Trial OR Review article have been selected. Above results are now reduced to 10 articles.
Search steps schematically...

Publication type: Clinical Trial OR Review

ventilator associated pneumonia OR VAP

(Nurse to patient ratio* OR nurse-patient ratio* OR Nursing Staff, Hospital OR "Personnel Staffing and Scheduling")

AND

Search History

<table>
<thead>
<tr>
<th>Search</th>
<th>Most Recent Queries</th>
<th>Time</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Search (#2) AND #4</td>
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<td>Search pneumonia, venti</td>
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<td>Search pneumonia, venti</td>
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<td>Search (nurse-to-patient ratio^ OR nurse-patient ratio^ OR Nursing staff, hospital OR Personnel staffing and scheduling)</td>
<td>12:33:50</td>
<td>53811</td>
</tr>
</tbody>
</table>

More History Clear History
Notice the Publication Type. This is a Review article.

Evidence is hierarchical. As the arrow goes up there is a reduction of bias, increased quality of evidence and clinical relevance.

Explore the resources linked to the pyramid at:
http://tinyurl.com/nyupyramid