Finding the Evidence in Perioperative Care: the basics of Asking clinical questions and application through literature searches

Dept. of Anesthesiology, Library In-service Training for Interns
Linda S. Murphy, MLIS
UCI Libraries
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Learning Objectives

- Help Anesthesiology interns to develop self-directed learning skills, motivating them to seek further learning when there are questions.
- Search and identify relevant evidence-based, point-of care resources in Anesthesiology.
- Introduce the concept of Evidence-Based Medicine (EBM), demonstrating simple methods to find and use the best evidence to answer clinical questions.
  - Formulate an answerable clinical question
  - Search PubMed and Cochrane Library effectively and efficiently to track down the best evidence.
  - Review and understand various types of studies, including randomized controlled trials (RCTs), systematic reviews of RCTs, Diagnostic, Prognostic and Qualitative studies
- Take the skills you learn and apply it to your medical education, clinical research, and patient management.
Agenda

1. Review UCI Libraries’ Resources and services
   - Anesthesiology & Perioperative Care Subject Guide
2. Search PubMed and the Cochrane Library
3. Review the PubMed exercise
4. Google and Google Scholar Advanced search
5. Download and configure the VPN software (http://www.oit.uci.edu/vpn/) for Remote Access to the UCI Libraries restricted online resources
This Subject Guide provides direct access to key resources and core textbooks that are relevant to and used by UCI Anesthesiology & Perioperative Care residency program. Most of these resources are provided and licensed by the UCI Libraries. For remote access, be sure to go through the VPN connection.
Department of Anesthesiology & Perioperative Care

Required and Recommended Textbooks that are Used by the Residency Program

Books that are available online

For remote access, be sure to logon with the VPN software

   - Available online via [EBL](#). Restricted to UCI.

   - Available online via [EBL](#). Restricted to UCI.

   - Available online via [SpringerLink](#). Restricted to UC campuses.

   - Available online via [EBSCO](#). Restricted to UCI.
EBM Review and Practice
Searching the Medical Literature to find the Best Available Evidence
Why Searching PubMed@UCI?

- Provides direct access to full-text articles via UC-eLinks.
  2. Select **PubMed@UCI**

- When access remotely, must logon with the **VPN** software. Instruction for download, installation, and configuration is at: [https://www.lib.uci.edu/connect](https://www.lib.uci.edu/connect).

PubMed Search Tips

- You **MUST** access PubMed through the UCI Library website.
- Capitalize Boolean connectors in PubMed (**AND, OR, NOT**).
- Avoid prepositions, or other minor parts of speech as search terms.
- Avoid acronyms, initialisms, and other abbreviations as search terms.
- Avoid imprecise search terms, e.g., *increased, better, greater, less, worse, vs.*, etc.
Conducting An Effective PubMed Search
Ask a Focused Clinical Question (PICO)

The first step of EBM is to ask a well-built focused clinical question with the **PICO** components.

- **P** = Patient/Population/Problems
- **I** = Intervention/Exposure
- **C** = Comparison
- **O** = Outcome

**Type of Question; Type of Study**

- Helps to develop a clear, answerable question that can be used to generate a search strategy.
- Defines the search concepts and search terms to facilitate a more effective search.
Two additional elements of the well-built clinical question are the type of question and the type of study. This information can be helpful in focusing the question and determining the most appropriate type of evidence or study.

<table>
<thead>
<tr>
<th>Type of Question and Study</th>
<th>Therapy</th>
<th>Diagnosis</th>
<th>Prognosis</th>
<th>Etiology</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>RCT &gt; Cohort &gt; Case Control &gt; Case Series</td>
<td>Prospective, Blind comparison to a gold standard</td>
<td>Cohort studies &gt; Case Control &gt; Case Series</td>
<td>RCT &gt; Cohort &gt; Case Control &gt; Case Series</td>
</tr>
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A Focused Clinical Question

In Pediatric ICU intubated patients, what is the efficacy and safety of precedex for sedation vs. other sedatives/analgesics in reducing ventilator days and ICU stay?

What is the PICO:

P =
I =
C =
O =

Type of Question = ?
Type of study = ?
A Focused Clinical Question

In **Pediatric ICU intubated patients**, what is the efficacy and safety of **precedex** for sedation vs. other sedatives/analgesics in reducing ventilator days and ICU stay?

**P** = Pediatric ICU intubated patients  
**I** = Precedex/Dexmedetomidine  
**C** = Other sedatives/placebo  
**O** = reducing ventilator days and ICU stay

**Type of question** = Therapy  
**Type of Study** = RCT

**Search terms to be considered:** ICU, Precedex, children
PubMed Search

(ICU OR intensive care units OR intensive care) AND (Precedex OR Dexmedetomidine)

with PubMed Filters

(ICU OR intensive care units OR intensive care) AND (Precedex OR Dexmedetomidine)

Filters: Randomized Controlled Trial; published in the last 5 Years; English; Child: birth-18 years
Effects of dexmedetomidine on emergence delirium in pediatric cardiac surgery.


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On the Request form, you will be asked to provide your Library Card number (a 14 digits beginning with 2197000...), an email address, and a pickup location. Be sure to use your UCI email. You can select any library pickup location. You will receive instruction on how to access the article online.
Why Critical Appraisal Is Important?

- After selecting an article from your literature search results, you must be able to critically appraise it.

- Critical appraisal is the systematic evaluation of clinical research papers in order to establish:
  1. Does this study address a clearly focused question?
  2. Did the study use valid methods to address this question?
  3. Are the valid results of this study important?
  4. Are these valid, important results applicable to my patient or population?
Why Critical Appraisal Is Important? (cont’d)

- If the answer to any of these questions is “no”, you can save yourself the trouble of reading the rest of it.

- Printable EBM worksheets -- Dartmouth Biomedical Libraries
  (http://www.dartmouth.edu/~library/biomed/guides/research/ebm-resources-materials.html?mswitch-redir=classic)

- Online worksheet -- Centre for Evidence-Based Medicine (CEBM) Critical Appraisal Tools website.
PubMed Exercise
Review
1. Which of the following to ensure full access to all the UCI Libraries restricted online resources remotely including ebooks, full-text journals, and databases?
   - UCInetID login via Cisco AnyConnect VPN software
   - Find them on the UCI Library website
   - Search Google to find the item you need
   - UCInetID login via the WebVPN

2. PubMed is a free database that can be accessed in several different ways. Which access method will provide external links to the UCI Libraries’ restricted full-text journals?
   - Googling PubMed;
   - PubMed@UCI;
   - PubMed.com;
   - PubMed.gov
3. Which PubMed tool allows you to quickly identify a specific article with limited information?

- Clinical Queries
- Journals in NCBI databases
- MeSH Database
- Single Citation Matcher
4. You were asked to retrieve this article in PubMed for a journal club discussion: Author last name: Krzych; the article is about *Glycaemic Control in Cardiac Surgery Patients* and it was published in 2015 *Curr Vasc Pharmacol*. PMID: 24568136

a) How would you search PubMed to locate this reference quickly?

b) How can you tell if the UCI Libraries have access to *Curr Vasc Pharmacol*?

c) Does Google Scholar provide a full-text link to this article?

d) If no full-text access is found in PubMed or Google Scholar, what is the next step to obtain this article?
A Practice Search

Clinical question:
In addition to usual antiemetics, is perioperative acupuncture effective in preventing postoperative nausea and vomiting in children undergoing surgery?

- What is the PICO?
- What is the optimal PubMed search strategy?
- What are the total search results?
- Any RCT studies that were published in the past 5 years?
P = Pediatric patients undergoing surgery
I = Acupuncture therapy + antiemetics
C = Antiemetics only
O = prevent postoperative nausea and vomiting

PubMed Search strategy
(Acupuncture OR Acupuncture therapy) AND (Postoperative Nausea and Vomiting OR PONV OR postoperative vomiting) AND (Child OR children OR adolescent OR infant OR infants) Filters: published in the last 5 years; English Results: 21

PubMed Search with the Age Group Filter
(Acupuncture OR Acupuncture therapy) AND (Postoperative Nausea and Vomiting OR PONV OR postoperative vomiting) Filters: published in the last 5 years; English; Child: birth-18 years Results: 18
Literature Search for Systematic Reviews

The Cochrane Library
What are systematic reviews?

Systematic reviews are a way of summarizing research evidence.

Seek “to systematically search for, appraise, and synthesize research evidence, often adhering to guidelines on the conduct of a review.

High-quality systematic reviews take great care to
- find all relevant published and unpublished studies
- assess each study
- synthesize the findings from individual studies in an unbiased way
- present a balanced and impartial summary of the findings with due consideration of any flaws in the evidence.

Not all published systematic reviews have been produced with meticulous care.
The Cochrane Database of Systematic Reviews contains critical analyses of multiple clinical studies that are peer-reviewed, prepared and supervised by a Cochrane Review Group according to strict guidelines.
Click on the + sign will bring up additional search boxes.
Advanced Search

Please note that the Advanced Search is optimised for English search terms. Certain features, such as search operators and MeSH terms, are only available in English.

Search

Search manager

Medical terms (MeSH)

Search limits

Send to search manager

Run search

6 Cochrane Reviews matching on "[Acupuncture OR Acupuncture therapy] in Title Abstract Keyword AND (Postoperative Nausea and Vomiting OR PONV OR postoperative vomiting OR antiemetic*) in Title Abstract Keyword - [Word variations have been searched]"

Cochrane Database of Systematic Reviews

Issue 2 of 12, February 2019

Order by: Relevance

Results per page: 25

1. Stimulation of the wrist acupuncture point PC6 for preventing postoperative nausea and vomiting

Anna Lee, Simon KC Chan, Lawrence TY Fan
Google Scholar https://scholar.google.com/

- Searches for scholarly material including books, journal articles, conference papers, chapters, and theses on a wide range of subjects.
- **intitle:** finds results with your search term in the titles only.
- **filetype:**pdf
- **Author:** finds articles by a specific author. `author:Jones`
- "Cited by" - to see newer papers that referenced it.
- "Related articles" - to see closely related work.
- **Publication Dates** -- change from Anytime to either Since 2012, 2015, 2016 or Custom range..

Search examples:
- **Author:**ZN Kain
- **author:**M Cannesson **filetype:**pdf
Remote Access to UCI Libraries Online

Restricted:  [https://www.lib.uci.edu/connect](https://www.lib.uci.edu/connect)

Virtual Private Network (VPN)

**Summary:** If you need to connect to UCI Net from off campus, Virtual Private Network (VPN) may be the solution for you. VPN allows you to connect to on campus-only resources like the Library and encrypts the information you are sending over the network, protecting your data.

Peer-to-peer file sharing services and other high-bandwidth applications should not be used while using the VPN service. You may be automatically blocked from using the VPN if your bandwidth exceeds the maximum bandwidth limit.

3 Ways to Access the VPN

1. WebVPN
2. VPN Software
3. iOS, Android OS, Chrome OS VPN

3 Ways to Access the VPN

**VPN Software Versions**

- iOS – iPhone, iPod Touch, iPad
- Android 4.x
- Chrome OS – ChromeBook

**Need Help**

- Call Us – (949) 824-2222
- Email Us – oit@uci.edu
- Self Service
- Help Desk
- Knowledgebase
Steve Clancy, MLS
Research Librarian & Bibliographer for Health Sciences and Nursing Science
Ayala Science Library, Room 247
Phone: 949-824-7309
Email: sclancy@uci.edu

Hector R. Perez, MLIS, MPH
Research Librarian & Bibliographer for Health Sciences
Ayala Science Library, Room 231
Phone: 949-824-6957
Email: perezhr@uci.edu

Linda Suk-Ling Murphy, MLIS
Research Librarian for Health Sciences
Ayala Science Library, Room 231
Phone: 949-824-6419
Email: lmurphy@uci.edu

Feel free to contact your medical librarians anytime!