Research Orientation

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Thursday, June 19, 2019
Disclosure & Bias

I disclose that I have no commercial interests whatsoever with this course including:
• Grants / Research Support: None
• Speaker Bureau / Honoraria : None
• Consulting Fees : None

This program has not received any commercial support of any sort from any organization

This program has not received any in-kind support of any sort from any organization.

There is no perceived or potential conflict of interest.

There is no need to mitigate any potential bias for this course.
STEP 1
The case...
<table>
<thead>
<tr>
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<th>Feasible</th>
<th>Adequate number of subjects to study</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Interesting</td>
<td>Getting the answer intrigues investigator, peers and community</td>
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</tbody>
</table>
| R | Relevant | To scientific knowledge  
|   |          | To clinical and health policy  
|   |          | To future research |
| E | Ethical | Amenable to a study that institutional review board will approve |
7 Clinical Inquiry types

1. **Intervention**
   
   Questions addressing the treatment of an illness or disability

2. **Diagnosis**
   
   Questions addressing the act or process of identifying or determining the nature and cause of a disease or injury through evaluation.

3. **Etiology**
   
   Questions addressing the causes or origin of disease, the factors that produce or predispose toward a certain disease or disorder.

4. **Prevention**
   
   Questions on how to reduce the chance of disease by identifying and modifying risk factors and how to diagnose disease early by screening.
Clinical Inquiry to Answerable Question con’t:

5. **Prognosis/Prediction**  
   *Questions addressing the prediction of the course of a disease.*

6. **Quality of Life/Meaning**  
   *Questions addressing how one experiences a phenomenon and their effects.*

7. **Therapy**  
   *Questions around how to select treatments offered to our patients that do more good than harm and that are worth the efforts and costs of using them.*
Real life into PICOT:

**P:** Population/disease (i.e. age, gender, ethnicity, with a certain disorder)

**I:** Intervention or Variable of Interest (exposure to a disease, risk behavior, prognostic factor)

**C:** Comparison: (could be a placebo or "business as usual" as in no disease, absence of risk factor, Prognostic factor B)

**O:** Outcome: (risk of disease, accuracy of a diagnosis, rate of occurrence of adverse outcome)

**T:** Time
Evidence-Based Practice
PICOT Scenarios:

1. **Intervention**  
   In African American female adolescents with hepatitis B, how does acetaminophen compared to ibuprofen affect liver function?

2. **Diagnosis**  
   In middle-aged men with suspected myocardial infarction, are serial 12-lead ECGs compared with one initial 12-lead ECG more accurate in diagnosing an acute myocardial infarction?

3. **Etiology**  
   Are kids who have obese adoptive parents at increased risk for obesity compared with kids without obese adoptive parents during the ages of 5 and 18?

4. **Prevention**  
   In OR nurses doing a five minute scrub what are the differences in the presence and types of microbes found on natural polished nails and nail beds and artificial nails at the time of surgery?
Evidence-Based Practice
PICOT Scenarios con’t:

5. **Prognosis/Prediction**
   For patients 65 years and older, how does the use of an influenza vaccine compared to not received the vaccine influence the risk of developing pneumonia during flu season?

6. **Quality of Life/meaning**
   How do pregnant women newly diagnosed with diabetes perceive reporting their blood sugar levels to their healthcare providers during their pregnancy and six weeks postpartum?

7. **Therapy**
   What is the duration of recovery for patients with total hip replacement who developed a post-operative infection as opposed to those who did not within the first six weeks of recovery?
1. **Intervention**
   In African American female adolescents with hepatitis B (P), how does acetaminophen (I) compared to ibuprofen (C) affect liver function (O)? (Time is optional).

2. **Diagnosis**
   In middle-aged men with suspected myocardial infarction (P), are serial 12-lead ECGs (I) compared with one initial 12-lead ECG (C) more accurate in diagnosing an acute myocardial infarction (O)?

3. **Etiology**
   Are kids (P) who have obese adoptive parents (I) at increased risk for obesity (O) compared with kids (P) without obese adoptive parents (C) during the ages of five and 18 (T)?

4. **Prevention**
   In OR nurses doing a five minute scrub (P) what are the differences in the presence and types of microbes (O) found on natural polished nails and nail beds (I) and artificial nails (C) at the time of surgery (T)?
5. **Prognosis/Prediction**
   For patients 65 years and older (P), how does the use of an influenza vaccine (I) compared to not receiving the vaccine (C) influence the risk of developing pneumonia (O) during flu season (T)?

6. **Quality of Life/Meaning**
   How do pregnant women (P) newly diagnosed with diabetes (I) perceive reporting their blood sugar levels (O) to their healthcare providers during their pregnancy and six weeks postpartum (T)?

7. **Therapy**
   What is the duration of recovery (O) for patients with total hip replacement (P) who developed a post-operative infection (I) as opposed to those who did not (C) within the first six weeks of recovery (T)?
### MESH

<table>
<thead>
<tr>
<th>Keywords</th>
<th>vs.</th>
<th>Medical Subject Headings (MeSH)</th>
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<tbody>
<tr>
<td>• natural language words describing your topic - good to start with</td>
<td>• pre-defined &quot;controlled vocabulary&quot; words used to describe the content of each item (book, journal article) in a database</td>
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<tr>
<td>• more flexible to search by - can combine together in many ways</td>
<td>• less flexible to search by - need to know the exact controlled vocabulary term</td>
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<tr>
<td>• database looks for keywords anywhere in the record - not necessarily connected together</td>
<td>• database looks for subjects only in the subject heading or descriptor field, where the most relevant words appear</td>
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<tr>
<td>• may yield too many or too few results</td>
<td>• if too many results - also uses subheadings to focus on one aspect of the broader subject</td>
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<tr>
<td>• may yield many irrelevant results</td>
<td>• results usually very relevant to the topic</td>
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In children with asthma, are inhaled corticosteroids more likely to result in growth delay than standard therapy with beta-agonists?
PubMed:
PubMed:

PubMed is a comprehensive database of over 28 million citations for biomedical literature from MEDLINE, life science journals, and online books.
Levels of Research:

• **Meta-Analysis**: A systematic review that uses quantitative methods to summarize the results.

• **Systematic Review**: An article in which the authors have systematically searched for, appraised, and summarized all of the medical literature for a specific topic.

• **Randomized Controlled Trials**: RCT's include a randomized group of patients in an experimental group and a control group. These groups are followed up for the variables/outcomes of interest.

• **Cohort Study**: Identifies two groups (cohorts) of patients, one which did receive the exposure of interest, and one which did not, and following these cohorts forward for the outcome of interest.

• **Review/ Background Information**: Handbooks, encyclopedias, and textbooks often provide a good foundation or introduction and often include generalized information about a condition. While background information presents a convenient summary, often it takes about three years for this type of literature to be published.
Levels of Research con’t:
Levels of Research con’t.
Limits:

Custom date range

YYYY MM DD to YYYY MM DD

Apply Clear
Boolean Logic:

- *salmonella* AND *hamburger* OR *eggs*

- *Kidney failure* vs. "*kidney failure*"

  
  \[
  \text{kidney failure} = 295,988 \text{ results} \\
  "\text{kidney failure}" = 71,134 \text{ results}
  \]
Clonidine and methyphenidate were effective for attention deficit hyperactivity disorder in children with comorbid tics.

Goldberg J.
PMID: 12440463 [PubMed] Related citations

Free Article
Interlibrary Loan

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1 selected item: 30936552

**Format**

- Abstract
- MeSH and Other Data

**E-mail**

healthscienceslibrary@howai

**Subject**

1 selected item: 30936552 - PubMed

**Additional text**

- Patron: Kristin Chapman

**Didn't get the message? Find out why...**
Key points:

- Seek articles with new or provocative tropics or unexpected results
- Peer-reviewed, well-respected journals
- Aim for randomized controlled trials
- Use recent articles and preferably landmark articles
STEP 2
Identifying discussion topics...
Appraisal:

Background of the article:

• Have previous studies been done on this topic? If so, what were the results and how do they lay the groundwork for the article being presented?
• What is the aim of this article?
Appraisal:

**Methods:**

- What type of study was completed? (randomized controlled trial, prospective cohort, etc.)
- Were patients randomized between control and treatment groups?
- Were the groups blinded?
- Were patient appropriately followed and accounted for at the end of the study?
Appraisal:

**Results**
- Were treatment and control groups similar after randomization?
- Were results analyzed based on the intention-to-treat principle?
- What were the results?
- How large was the treatment effect? (calculation of relative and adjusted risk ratios, and number needed to treat)
- Were the results statistically significant? (Confidence Interval and P value)
- Were there any complications or side effects?
  - And if so, how much to they effect standard of living?
**Conclusions**

- What are the conclusions of the article? Are they supported by the results?
- Were the results clinically significant?
- Can I apply the results to my patients and clinical practice?
- What are the strengths of the article?
- What are the limitations of the article?
- What future directions might be taken to further substantiate the conclusions?
Key points:

- Assess for sound methodology
- Interpret results
- Apply results to clinical practice
- Access for bias
STEP 3
Discussion - the validity and applicability - sharing
Setup:

- First stage: Begin the search for the article
  - FIRE
  - Clinical Inquiry Type
  - Converting to PICOT
  - MeSH

- Second stage: Retrieve and Review
  - Print full text or order Interlibrary Loan
  - Submit the articles for review to journal club leader

- Third stage: Presentation
  - Discussion

- Fourth stage: Embrace and Enhance
  - Begins the search for the next article
Article appraisal

• ASK:
  • See if you can find the PICOT in the title, or in the abstract

• AQUIRE:
  • See if the conclusions can be used in similar situations

• APPRAISE:
  • Understand the study methodology, the outcomes, and bias
Sharing function:

Choose Destination

- File
- Collections
- Order
- Citation manager

1 selected item: 30918399

Format

- Abstract
- MeSH and Other Data

E-mail

kristin.chapman@howard.e

Subject

1 selected item: 30918399 - PubMed

Additional text

E-mail

Didn't get the message? Find out why...
Sharing, con’t:

[Table]

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<tr>
<th>Clinical Subject Resource Guides</th>
<th>Introductions to the Principles and Practice of Clinical Research (2018)</th>
</tr>
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<tbody>
<tr>
<td>Cardiovascular</td>
<td>Principles and Practice of Clinical Research, 3rd Ed by James B. Glinn and Frederick F. O’Gara (Editors)</td>
</tr>
<tr>
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<tr>
<td>Heart Failure</td>
<td>Howard University Hospital/CMC - Ask Your Remote Site.</td>
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<tr>
<td>Once registered, access the course materials here: HOPEX</td>
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<td>ICD 10</td>
<td>CPT Codes</td>
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<td></td>
<td>AHCPC Coder Search</td>
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<tr>
<td></td>
<td>Search across A Medical code sets: ICD-10, HIPPO Level 3, ICD-10-CM, Volume 1 and 2. Let us medical codes using a keyword or a code.</td>
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# Lib Guides

## Databases
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## Journals
- Annals of Internal Medicine
- Circulation
- European Journal of Internal Medicine
- Internal and Emergency Medicine
- Internal Medicine
- JAMA
- JAMA Internal Medicine
- Journal of General Internal Medicine
- Journal of internal medicine
- Medical Clinics of North America

## Textbooks
- The 5-Minute Clinical Consult 2018 by Frank J. Domino, Robert A. Bardor (Editor), Jeramy Quilling (Editor), Mark B. Stephens (Editor)
  - ISBN: 9781575841224
  - Publication Date: 2018-05-07
- Current Medical Diagnoses and Treatment 2017 by Markus Papadimos, Stephen J. McPhee, Martha A. Papadimos, Michael V. Robson
  - ISBN: 9781259550111
  - Publication Date: 2016-04-01
- Harrison’s Principles of Internal Medicine by J. Larry Jameson, Dan L. Longo, Stephen L. Hauser, Dennis L. Kasper, Joseph Loscalzo, Anthony S. Fauci
  - ISBN: 9781259444050
  - Publication Date: 2018-04-13
- Current Practice Guidelines in Inpatient Care by Jacob David
  - ISBN: 9781598444227
  - Publication Date: 2018-05-31
  - ISBN: 9781598444082

## Featured Faculty Publications
- Journal Club
- Human Anatomy, Vice 2018
- Biogzhou
References


References con’t: