

# *ASKING*

**Constructing a Good Clinical Question  
Using the PICO Format**

**Objectives:**

- To demonstrate understanding of a “good clinical question.”
- To distinguish between a background question, usually answerable by information and a foreground or evidence seeking clinical question.
- To demonstrate the ability to compose structured, searchable clinical questions using the four part PICO (Patient, Intervention, Comparison, Outcome) format.

In this lab, you will read several patient scenarios and compose appropriate background and foreground, evidence seeking clinical questions using the PICO format. These PICO questions will be used In future exercises where you will have the opportunity to construct and perform searches of the medical literature databases.

**Resources:**

1. "Asking answerable clinical questions" in D.L. Sackett, S.E. Straus, W.S. Richardson, W. Rosenberg, and R.B. Haynes. Evidence-based Medicine: How to Practice and Teach EBM. New York: Churchill Livingstone, 2000. p.13-27.
2. Weinfeld JM and K Kinkelstein. How to answer your clinical questions more efficiently. Fam Prac Mgmt. 2005;Jul-Aug:37-4
3. Huang X, J Lin, D Demner-Fushman PICO as a Knowledge Representation for Clinical Question sarchive.nlm.nih.gov pubs
4. Virgilio RF, Chiapa AL, Palmarozzi EA. Evidence-Based Medicine, Part 1. An Introduction to Creating an Answerable Question and Searching the Evidence. JAOA 2007; 107:8.295-297

# Directions:

## 1. Read the assigned patient scenario(s)

## 2. Download the PICO Form With Search Results Lastname.topic.2008Sp.doc file.

- a) Save the file on your hard drive or desktop changing the file name *using your last name and topic name in the file name*. Put your name and teammate names on the file.
- b) Re-open the file and type in the information. Save your work with the new file name.

## 3. Fill out the PICO Form

- a) Fill in key words and phrases under each of the table headings that will help compose a good clinical question: Patient, Intervention, Comparison and Outcome.
- b) Compose one (1) background PICO format question using the broader PICO terms and two (2) to four (4) foreground PICO questions (well defined patient oriented clinical questions)
- c) Place brackets around each component of the clinical, PICO format question to make sure all components are covered.
- d) Indicate which questions are “background” question(s) and why they are needed (e.g., to gather additional information, to determine specific interventions or to define outcomes).

## 4. Fill out the Search Strategy & Results Worksheet

- a) Narrow the clinical question, determine additional clinical aspects and provide additional search terms for your clinical question using the compiled evidence database web sites.
  - i) Explore each of the compiled evidence databases (on the PICO Search Strategy & Results Worksheet) and search for specific information that can be used as additional PICO terms or synonyms.

There are several excellent compiled evidence websites for health care. In this activity, you will use four of the best:

- a. **Natural Standard** [www.naturalstandard.com](http://www.naturalstandard.com)
  - b. **Natural Medicines Comprehensive Database**  
[http://www.naturalmedicines.com/member\\_home.asp](http://www.naturalmedicines.com/member_home.asp)
  - c. **US Agency for Healthcare Research and Quality (AHRQ)** [www.ahrq.gov](http://www.ahrq.gov)
  - d. **The US National Library of Medicine’s MedlinePlus** [www.nlm.nih.gov/medlineplus/](http://www.nlm.nih.gov/medlineplus/)
- ii) List several synonyms or terms under each PICO heading.

## 5. Note your search strategy on the PICO Search Strategy & Results Worksheet. (what compiled evidence website or database you used, what terms you used to search, how you searched (key terms, links, browsing topics, etc.), and what results you found

## 6. Submit the PICO form with the Search Strategy & Results Worksheet

- a) Electronic copies may be turned in via the CygNET “drop box” (Assignments >> PICO lab >> upload a single file.)
- b) OR e-mail the correctly named file to [ebp1@nuhs](mailto:ebp1@nuhs) as well as your e-mail and your partner(s)’.
- c) Hardcopies may be turned in at the end of lab.

## 7. Make sure to keep a copies of

- a) Your team’s patient scenario
- b) Submitted PICO form with the Search Strategy & Results Worksheet:
- c) **Tip:** e-mail the file to yourself and your teammates.

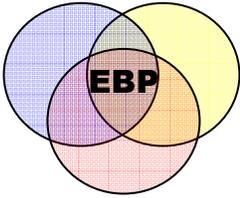
# Example Patient Scenario and PICO table

**Topic:** CAM Therapies for mild to moderate depression and low back pain

**Patient Scenario:**

James, a 32 year old, white male longtime patient, sees you for back and neck pain and headaches he associates with his “road-warrior” sales job that includes extensive travel with overnight stays and time-zone changes. He is frustrated that his pain never goes away despite regular visits. He notes that his mood is better, the pain is diminished and he has less trouble sleeping when he travels to southern areas where it is warmer and sunnier. After investigating the possibility of depression, you and he decide to look into additional alternative therapies that may help alleviate these symptoms of mild to moderate depression as well as chronic pain.

	Patient, population, problem	Intervention	Comparison	Outcome
<b>Consider</b>	Describe relevant patient characteristics or problem similar to your patient’s. Be brief, clear, precise, narrow. Define alternatives.	Determine possible prognostic factors, causes.  Background: broad (“ <i>what is most effective?</i> ”) or Foreground: narrow, specific therapy	Alternative therapy.  Consider a limiting factor.	Clinical outcome or goal, also known as the measured outcome or deliverable. What do you want to accomplish? What effect do you hope to have? Cure, diagnosis; cost, quality of life. Be specific. Think “key words.”
<b>Question components</b>	(adults with) mild to moderate (seasonal) depression chronic (low back / lumbar / neck) pain	<ol style="list-style-type: none"> <li>1. light therapy</li> <li>2. nutritional supplements</li> <li>3. diet</li> <li>4. exercise and lifestyle</li> </ol>	(Prescription anti-depressants) non-steroidal anti-inflammatory drugs	<ol style="list-style-type: none"> <li>1. decrease mood swings</li> <li>2. decrease fatigue</li> <li>3. alleviate (joint, muscle, back, etc) pain</li> <li>4. alleviate symptoms</li> </ol>
<b>PICO</b>	<p><u>Background:</u></p> <p>What are effective lifestyle or diet based interventions for the alleviation of mild seasonal depression?</p> <p>What are effective lifestyle or exercise based interventions for the alleviation of chronic low back or neck pain?</p> <p><u>Foreground:</u></p> <ol style="list-style-type: none"> <li>1. For [<b>P</b>=adults with mild to moderate depression] is [<b>I</b>=light therapy] as effective as [<b>C</b>=prescription drugs] to [<b>O</b>= alleviate of mood swings OR fatigue OR pain]?</li> <li>2. For [<b>P</b>=adults with mild to moderate depression] are [<b>I</b>=specific botanical supplements: St. John’s Wort, Ginko biloba, etc.] effective to [<b>O</b>=alleviate mood swings and other emotional symptoms]?</li> <li>3. Are [<b>I</b>=lifestyle changes (broad) such as exercise (specific)] effective to [<b>O</b>=alleviate fatigue and physical symptoms OR pain (specific)] associated with [<b>P</b>=mild to moderate depression OR chronic (low back / lumbar / neck) pain]?</li> </ol>			



# Constructing a good clinical question using the PICO format

EBP 1 Team # \_\_\_\_\_

Names: \_\_\_\_\_

Topic: \_\_\_\_\_

Patient Scenario:

	<b>Patient, population, problem</b>	<b>Intervention</b>	<b>Comparison</b>	<b>Outcome</b>
<b>Consider</b>	Describe relevant patient characteristics or problem similar to your patient's. Be brief, clear, precise, narrow. Define alternatives.	Determine possible prognostic factors, causes. Background: broad ("what is most effective?") or Foreground / narrow, specific therapy	Alternative therapy.  Consider a limiting factor.	Clinical outcome or goal: what do you want to accomplish? What effect do you hope to have? Cure, function, diagnosis; cost, quality of life? Be specific. Think "key words."
<b>Question components</b>				
<b>PICO</b>				

# PICO Search Strategy & Results Worksheet

Date: \_\_\_\_\_ Team # \_\_\_\_\_

Name(s) \_\_\_\_\_

Topic: \_\_\_\_\_

## Compiled Evidence Websites and Databases Search Results

### **Natural Standard**

[www.naturalstandard.com](http://www.naturalstandard.com)

Natural Standard is an evidence-based informational “compiled evidence website focused on complementary and alternative therapies including herbs, supplements, manual medicine and acupuncture. Natural Standard rates the strength of compiled evidence. Available by subscription, Natural Standard requires NUHS IP address recognition and must be accessed on campus.

### **Search Keywords or links used:**

**Results** *(how many results total and estimate the % relevant to your specific PICO):*

### **Natural Medicines Comprehensive Database**

[http://www.naturalmedicines.com/member\\_home.asp](http://www.naturalmedicines.com/member_home.asp)

Natural Medicines provides evidence-based clinical information for natural medicines and products. It is available by subscription and uses IP address recognition for NUHS on campus access. The NUHS Natural Medicines subscription allows only a limited number of simultaneous users. If the database is unavailable, close the site and return later when current users close the site. You may need to refresh your browser after returning.

### **Search Keywords or links used:**

**Results** *(how many results total and estimate the % relevant to your specific PICO):*

## **US Agency for Healthcare Research and Quality (AHRQ)**

[www.ahrq.gov](http://www.ahrq.gov)

AHRQ is a division of the US Department of Health and Human Services whose mission is to improve the quality safety, efficiency and efficacy of health care for all Americans. Use the Clinical Information link to search specific topics and clinical questions. Access and information is free through the internet.

**Search Keywords or links used:**

**Results** *(how many results total and estimate the % relevant to your specific PICO):*

## **The US National Library of Medicine's MedlinePlus**

[www.nlm.nih.gov/medlineplus/](http://www.nlm.nih.gov/medlineplus/)

MedlinePlus is an free, open access website run as a service of the National Library of Medicine and US National Institutes of Health, containing information and links to research aimed at the professional as well as the consumer levels. It can be accessed and searched independently or linked through the NLM's National Center for Biotechnology Information (NCBI) database management system Entrez PubMed.

**Search Keywords or links used:**

**Results** *(how many results total and estimate the % relevant to your specific PICO):*