PICO and Formulating the Clinical Question: A Guided Exercise

Background & Foreground Questions

Many questions arise during patient care. Some are general questions about a clinical problem or a disease process, e.g. "*What is the overall best approach to trauma?"* These are called **Background Questions** and are best answered by going to an excellent review article or respected evidenced-based textbook. When in need of an overview on clinical presentation of a disease, standard therapies, diagnostic tools, etc., consult a textbook.

Complex clinical questions are best answered by going to the primary or pre-assessed studies in the literature these are called **Foreground Questions**. These patient-centered problematic questions, involve interpretation and consideration of the risks vs. benefits for a patient or group of like patients. This can be approached efficiently and effectively if you start by first systematically clarifying the question (PICO M), understanding what type of clinical question it is and what type of study design is appropriate before searching the literature. Using the PICO acronym will help you organize your query into a searchable foreground question.

PICO (M):

Patient/Problem	**I**ntervention	**C**omparison/Control	**O**utcome/Effects	**M**ethodology

Question Categories: Identify the question type to consider appropriate studies and data sets.

Diagnosis	Diagnostic Test	Harm/Etiology	Prognosis	Prevention/Therapy

Exercise 1

After careful consideration of the clinical manifestations, you suspect that your patient has acute cholecystitis. In order to confirm a Dx you plan to order a test. You know that cholescintigraphy / HIDA (radionuclide) scan has been shown to have the highest sensitivity and specificity. However, the attending tells you to order an ultrasound because "it is the best first test." Seeking further evidence you decide to consult the literature and then frame the question,

"In patients with suspected acute cholecystitis, without previous gallbladder disease, is ultrasound a better first test than cholescintigraphy or hida / radionuclide scan?" -- **A Question of Diagnostic Test**

[A background question would be: "What is the differential diagnosis for acute upper right quadrant pain?"]

Patient/Problem	**I**ntervention	**C**omparison/Control	**O**utcome/Effects	**M**ethodology
Acute Cholecystitis	Ultrasound	Cholescintigraphy Hida Radionuclide scan	"sensitivity and specificity"	Prospective study RCT Meta-analysis

Exercise 2

As a resident you have just seen a 58-year old patient with type 2 diabetes with normal blood pressure. You consider treating this patient with ace inhibitors because the attending said treatment could delay progression to diabetic nephropathy. What is the Clinical Question?_____

_____

What type of Question? _____

Patient/Problem	**I**ntervention	**C**omparison/Control	**O**utcome/Effects	**M**ethodology

Exercise 3

For this exercise you will work together in small groups on either one of cases below. You will be assigned a case and source to search. After 15 minutes we will review your search history and examine your results. Use the *Evidence-Based Health Care Worksheet* to develop your strategy and to indicate your findings.

Case 1

There has been a special clinical conference to discuss the use of macrodantin vs. bactrim in treating young teen-age girls with UTI. Bellevue Hospital recommends bactrim, Tisch Hospital recommends macrodantin. You must come up with an evidence-based recommendation for what the hospitals should use. You are to retrieve the "strongest" evidence from either a primary or evidence-based secondary resource.

In adolescent girls, is macrodantin more effective than bactrim in treating UTI?

Bonus Search Challenge

Case 2

Tobacco smoke has been linked to a number of health problems. There has been much discussion of the efficacy of therapies for smoking cessation. Various forms of nicotine replacement are used as a therapeutic intervention with varying results. It has been suggested that greater efficacy can be achieved by combining nicotine replacement therapy with anti-depressive agents such as Bupropion.

Is the combination of anti-depressive agents such as Bupropion with nicotine replacement more successful in achieving smoking cessation than nicotine replacement alone?

→ Resources and Further Reading

Ehrman Medical Library Assistance: email: library@library.med.nyu.edu
Telephone 212-263-8483

EBM Toolkit (http://library.med.nyu.edu/library/eresources/toolkits/ebm/index.html)
A collection of Web resources for learning about, teaching, and practicing EBM

Patient Management Toolkit (http://library.med.nyu.edu/library/eresources/toolkits/patientmgmt.html)
A broader collection of Web resources for patient management information

PDA Toolkit (http://library.med.nyu.edu/library/eresources/toolkits/pda.html)
Useful links for EBM calculators for the personal digital assistant

Search the Ehrman Medical Library online Catalog MEDCat
http://medcat.med.nyu.edu
Search by Subject: Evidence based medicine

Users Guide to the Medical Literature Series—JAMA (http://www.cche.net/usersguides/main.asp)
A definitive guide to the practice of EBM

McMaster (http://hiru.mcmaster.ca/)
Workshop on how to teach Evidence Based Clinical Practice