The TTUHSC Libraries have been collaborative partners with the Departments of Surgery and Internal Medicine in teaching EBM research skills at three of the four campus locations (Lubbock, Amarillo, El Paso). Librarians have worked with the faculty and students during their clerkship rotations for the last four years. Three different complementary approaches have evolved and will be presented.
Library involvement in teaching evidence–based medicine skills within the required third year rotations was first incorporated into the MSIII Surgery rotation in 2004 and it has been evolving ever since. An EBM station with standardized patient was introduced into the Surgery OSCEs in December, 2004. The Internal Medicine Department introduced an EBM station into the OSCE in 2006.

In order to help prepare students to incorporate evidence–based practice into their clinical year, early in the third year all medical students in Amarillo are instructed by the library faculty in the basic tenets of evidence-based medicine (EBM) and in appropriate database searching techniques. The Surgery rotation builds on these basic skills with five additional EBM components:

1. As a review of epidemiology and statistics, the students are required to complete the tutorial available through Vanderbilt ’s Eskin Biomedical Library Evidence-Based Knowledge Portal (http://www.mc.vanderbilt.edu/biolib/ebmportal/)

2. A critical appraisal session is conducted early in each rotation, with selected journal articles based on the American College of Surgeons Evidence–Based Reviews in Surgery monthly reading list.

3. Two “EBM Trauma Rounds” are held each rotation in the SICU of the teaching hospital. This gives the students an opportunity to take EBIM “to the bedside.” The group discusses the specifics of a current case and, using PDA resources and a computer to access library resources, determines evidence-based responses to management and treatment questions posed by the Clerkship Director. The faculty librarian is present during these sessions to help the students define the question, determine appropriate resources and introduce them to additional web resources.

4. Surgery students are required to prepare a forty–five minute evidence-based case presentation. The faculty librarian is involved in evaluating the adequacy of each student’s clinical question, PICO statement and search strategy and by giving final approval on the Critically Appraised Topic (CAT) summary for each presentation.

5. EBM skills are evaluated through an EBM OSCE station during end-of-rotation exams. By utilizing a standardized patient as a component of this station, communication and interpersonal skills are evaluated in addition to the “4 A’s” of evidence-based medicine: Ask, Acquire, Appraise and Apply. The standardized patient (SP) comes to the office seeking a second opinion from the student doctor; the student interviews the SP to determine the SP’s questions and concerns; the student leaves the office to conduct a brief (fifteen minute) literature search to determine the best evidence to answer the questions; the student returns to explain the evidence to the SP and to suggest an appropriate treatment plan based on the best evidence. The standardized patient evaluates the student doctors on their communication and interpersonal skills; the faculty librarian evaluates the student doctors on their communication and interpersonal skills and also on the EBM skills demonstrated during the exercise.

The third year Internal Medicine EBM OSCE measures the same EBM skills (ask, acquire, appraise and apply) although a standardized patient is not used during the examination. Students are given a written clinical scenario with specific questions to be answered (often a medications question with patient education and guidelines/’latest best evidence’ components). The student has twenty minutes to search appropriate databases to answer the questions. The faculty librarian interviews the student to assess the answers to the questions, the student’s search process and the appropriateness of the evidence used to answer the questions. The faculty librarian evaluates the student on the EBM skills demonstrated during the exercise.

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Four Core Purposes of EBM searching are:

- To construct an appropriate clinical question.
- To retrieve the current best evidence that answers the question.
- To critically appraise the evidence for validity as it is applied to the patient in question.
- To apply the evidence using the appropriate clinical filter (diagnosis, treatment, prognosis, etc.) for the patient.

Teaching EBM – Searching Orientation

- Medical Student Coordinator calls the first week of each period to schedule 1-hour orientation for new rotation class MS III’s.
- There are usually about 10 students in each rotation.
- The Librarian: explains EBM and how to research EBM databases, distributes handouts, and reviews the routine for scheduling the practice search session in the library.

Internal Medicine EBM Routine

- Associate Professor (Internal Medicine) assigns each student (usually 1 or 2 students per week) a patient care topic.
- The student comes to the library to schedule an EBM search session with a librarian.
- The student is instructed to bring the completed PICO question to the session.
- The Librarian: reviews the student’s PICO statement for appropriateness.
- The Librarian: After session, scores practice OSCE.

OSCE Itself

- A half-day in duration.
- The students are split into two groups.
- 6 stations: 2-chest x-ray, 2 patient exam, and 2 EBM stations.
- Usually held in an Internal Medicine Clinic (Patient Examination Room that has a computer with Internet access).
- Outcomes—pass—fail; EBM is only 25% of total OSCE grade.
- 30 minutes total test – 5 minutes PICO, 15 minutes searching, 5 minutes interpretation & applicable questions; 5 minutes recording and scoring evaluation form.
Evidence–Based Medicine (EBM) training for the 3rd–year Internal Medicine Objective Structured Clinical Exam (OSCE)

During the 8–week Internal Medicine rotation, third–year medical students learn evidence–based medicine literature searching skills that are evaluated in an EBM station during the OSCE. A librarian introduces the objectives during the first day of the Internal Medicine clerkship orientation.

The objectives state that as a result of this course, participants will:

• Create a focused, well-articulated question using the PICO model;

• Distinguish between the various point–of–care tools, the types of data retrieved from each tool, and incorporate their use into daily practice;

• Search PubMed effectively;

• Utilize various EBM tools to answer a clinical test question as a part of the OSCE;

• Discuss search skills and assess the EBM process used in the EBM OSCE station with a library faculty member;

• Integrate the evidence with their clinical expertise and the patient values.*

Reference librarians meet one–on–one for 2 or 3 hours with each student to teach and practice the following resources: ACP PIER, DynaMed, Essential Evidence Plus, First CONSULT, Gold Rush, National Guideline Clearinghouse, and PubMed. In preparation for a case presentation to the Clerkship Director, the student learns to search the databases by researching a PICO formulated clinical question they developed earlier. The EBM station is one of four stations and each station is 30 minutes long. The EBM OSCE takes place in an Internal Medicine Clinic exam room that has a computer with Internet access. The test question is developed by the Internal Medicine Clerkship Directors. The student has 20 minutes to research the question, then the librarian joins the student to review search strategies. Using an evaluation form, jointly developed by Internal Medicine and library faculty, answers are discussed and the student's research skills are graded.

During the third–year Surgery clerkship, the library collaborates with the Chair of Surgery teaching EBM searching and critical appraisal skills of the medical literature in a group setting. However, this training is not geared toward OSCE testing.

After 10 Internal Medicine rotations with approximately ninety students, the librarians are pleased that the students are doing very well. They are reasonably comfortable using the databases presented in the one–on–one teaching sessions. Student research confidence levels have increased dramatically with their newly acquired searching skills. In addition, the Internal Medicine faculty is satisfied with the collaborative efforts between their department and the library.


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A multi–faceted approach to EBM OSCE instruction

A Collaborative Project with Librarians from the TTUHSC Libraries
and the TTUHSC School of Medicine
Amarillo, El Paso, Lubbock
Texas

This annotated historical review of research articles
documents librarians’ involvement with both Evidence–Based Medicine (EBM) training
and the Objective Structured Clinical Examination (OSCE).

Dawn Kruse, MSIS, Jan Rice, MLS, AHIP, Stephanie Shippey, MLS, AHIP

October 2008
A multi-faceted approach to EBM OSCE instruction.

This historical review of research articles documents librarians’ involvement with both Evidence-Based Medicine (EBM) training and the Objective Structured Clinical Examination (OSCE). Jan Rice, MLS, AHIP, Stephanie Shippey, MLS, AHIP and Dawn Kruse, MSIS collected the research articles. Databases searched were PubMed, Cinahl Plus with Full Text, Library and Technology Abstracts and Proceedings – Conference, Academic Search Premier and Google. The search terms used were OSCE, objective structured clinical examination, librar*, EBM, evidence-based medicine, (education, medical, undergraduate), clinical competence and educational measurement. A brief annotation follows each citation.

Dawn Kruse, MSIS

  PMID: 763183
  This article describes the OSCE, its usefulness, pros and cons, reliability, practicability, etc.
  EBM was not discussed.
  Librarians were not involved.
  A shorter variation of this article appeared in British Medical Journal:

  PMID: 8342135
  About OSCE being given to surgical interns.
  No EBM discussed or searches done.
  No librarian involvement.

  PMID: 8938339
  This became a research project to establish a baseline for further educational instruction in searching techniques for the medical student curriculum.
  Over 8 days approximately 120 - 4th year medical students in 15 small groups were tested. The exam lasted for at least 4 hours, during which time a librarian was assigned to the MEDLINE station. (A total of 7 librarians participated.) This station was not used as a grade but to gather statistics on how well the students knew how to find information that they would need to answer questions in the future. It was determined that one library instruction session is not enough to equip students with the needed information-retrieval skills.
  EBM was discussed.

  PMID: 10550033
  Discussed EBM.
  Librarians taught a 2 hr. course in the first year of medical school. The students were required by the medical school to do 6 searches after that course, but the searches were not graded by anyone.
In their 3rd year, they did an OSCE and one of the stations was searching MEDLINE. The librarians graded the results. It was found that the 2 hr. course was not sufficient so they have expanded the curriculum to include more time with the librarians and more practice searches are now graded by the librarians.

PMID: 10824800

EBM program taught at the New York Chapter of the American College of Physicians.
Program began in 1996.
Taught to nominated teaching faculty (physicians) and librarians.
EBM resource center at ACP started as a result of these courses.


Gives OSCE definition, use, psychometric qualities and feasibility/practicality.

PMID: 11999177

Librarians taught MEDLINE searching skills (EBM) to residents on a one on one basis. Pre-, post- and 6-month post-surveys were given to see how the residents felt about their abilities.
OSCE was not discussed.
Included in the paper is a Search strategy analysis tool.

PMID: 12431934

Tested EBM and critical appraisal skills through an OSCE.
Did not teach EBM skills before hand; after testing, decided to add it to the curriculum.
Tested 3rd year students.
Does not mention the library or librarians.

PMID: 14985203

PBE – Performance-Based Examination
30-hr. EBM course was taught including, MEDLINE searching. Teacher is unidentified.
At one station the students were asked a clinical EBM question relating to their disease process.
Students were asked to develop an appropriate clinical question, perform a Medline search, critically appraise a complete selected article, reach a conclusion to their question, and transmit the information to the patient. Each student’s clinical question, search terms, selected articles, and rationale were evaluated by faculty question-writers, clinical librarians, and the EBM course director, using a five-point Likert scale.
Librarians and physicians taught classes during the first 2 years of medical school. In the 3rd year they decided to offer a workshop to see how well the students had learned what they were taught the first two years. Weaknesses in Boolean and MeSH searching were identified.

OSCE was not discussed.
EBM discussed.

OSCE included no discussion of EBM or Library assistance.

OSCE was not discussed.
Librarians were not used.
Discusses proficiency at critically appraising an article. Found that it can be done well but the information is not transferred to the patient level.
EBM discussed.

A systematic review of EBM being taught different ways and whether it improved knowledge, skills, attitude and behavior.
OSCE was not discussed.
No librarians used.

OSCE was not given.
Had formal presentations.
Librarians did teach two sessions on EBM.
For Internal Medicine students, but taught similarly to the surgery clerkship at TTUHSC in Lubbock.

OSCE was not given.
EBM curriculum based on an individual block rotation and designed to integrate and reinforce EBM skills throughout the residency program.
2-week, individual EBM rotation for interns.
Taught by Faculty Director and the medical librarian (co-director).
Question obtained from inpatient service rounds was used by the librarian as material for a
tutorial on developing search strategies and using high quality web-based EBM resources. Librarian
provided input into alternative search strategies and information resources. One page response is
developed in the form of a Critically Appraised Topic or CAT. Results are presented to and discussed with
the inpatient team. They estimated that training 13 interns per year requires approximately 70 hours of
librarian time and 200 hours of the faculty Director’s time.
Similar to surgery clerkship done by TTUHSC in Lubbock.

PMID: 15634359

Historical perspective on where EBM and EBP (Evidence Based Practice) originated, what it
means, and how it is supposed to be used, and how it benefits the patients.

did not change behavior: a before and after study. BMC Med Educ.;5:40-
PMID: 16364181

Pre-test before and Post and 8 month surveys after a 2 day workshop run by physicians with
health librarians assisting. The occupational therapists were asked to keep a diary of their searching for
EBM, reading and appraising articles. They also had an assignment that they had to finish after the
workshop.
OSCE was not discussed.
Librarians only used during the workshop.

(2006 Jan). Dinkevich, E et al. Effect of a brief intervention on evidence-based medicine skills of pediatric
residents. BMC Med Educ.;6:1-
PMID: 16403214

Residents attended 4 – 2hr. sessions over 4 weeks on EBM.
OSCE was not mentioned.
No librarians used.


Overview of two programs that began teaching professionals (physicians and librarians) how to
teach EBM and why it is important.
Other skills (critical appraisal and statistical concepts) were also taught.
One program began in 1996 and the other 1999.
OSCE was not mentioned.
Survey of librarians was administered after they returned to their respective campuses to
determine if they used what they had learned.

(2006 Jun). Caspi, O et al. Evidence-based medicine: discrepancy between perceived competence and
PMID: 16807169

Critical appraisal and research of EBM.
4th year students tested on understanding of EBM through survey.
OSCE was not mentioned.
No Librarians used.

PMID: 16776616

4th year medical students.
OSCE was given.
EBM searching station.
Searching algorithm for scoring.
3 hr. of trained librarian time but no indication if the librarian taught or advised on setting up the OSCE station.
Librarian didn’t score OSCE.

PMID: 17213114

Discusses problems teaching and evaluating EBM performances.
OSCE was not discussed.
No Librarians mentioned.
Discusses Miller’s pyramid of clinical competence in the article below:


PMID: 16960213

Discusses OSCE and the checklists used to evaluate the student's performances.
Does not include searching databases or EBM.

http://www.eblip4.unc.edu/papers/Myers.pdf

Taught in small groups until the class size became so large that they had to teach an entire class year at one time.
Determine that small groups retained the skills better over time.
Chose OSCE to evaluate PubMed searching skills because of bandwidth problems.
3rd and 4th year medical students are given an OSCE twice a year to include PubMed searching.
The students were identified by a student number on their OSCE answer sheets.
Librarians then graded the PubMed searching on those answer sheets.
Did not have face-to-face evaluation or discussion with the students.

OSCE was not discussed.

8-week EBM course taught for a total of 24 hours of instruction.
Taught by faculty, chief residents, and librarians in the Library’s computer lab.
Each session was 3 hours long.
Librarians also created a website for accessing all of the course materials.

PMID: 17922170

OSSE – Objective Structured Searching Evaluation
Physicians and one librarian taught the courses.
Two physicians grade the OSSE.
Interesting ideas about how to grade OSSE are discussed.
EBM discussed.

PMID: 18241705

Discusses OSCE and how performed.
Discusses EBM being tested, which was modeled after the Fresno EBM test. It does not tell how the students were taught EBM, only that they didn’t receive adequate instruction. It does not include the library or librarians in any of the discussion.
If you are interested in the validation of the Fresno test, see:
PMID: 12574047

If you would like to see the Fresno test rubric visit this site: www.fammed.washington.edu/ebp/media/GradingRubricTestA4_23_.doc


EBM workshops taught by physicians and librarians together.
OSCE was not discussed.
Administered EBM practicum final exam.
Use of Audience Response System (ARS) during workshop.
The ARS helps the teachers to collect data, promote active learning and to have real time feedback.


Librarians working along side physicians.
Librarians producing library portals for each of the medical rotations that showcase different resources.
Mentions EBM but not who teaches it.
No OSCE, but they have Five Minute Challenges (5MCs).
Level of evidence is taught in the 1st and 2nd years because of how the levels were misunderstood in the 3rd and 4th years.
Texas Tech University Health Sciences Center

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A multi-faceted approach to EBM OSCE instruction
A Collaborative Project with Librarians from the TTHUSC Libraries and the TTUHSC School of Medicine
Amarillo, El Paso, Lubbock
Texas

Richard C. Wood, MLS, Executive Director of Libraries
Amarillo
El Paso
Lubbock

Jan Rice, MLS, AHIP                    Lillian Carl, MSLS, Milagros de Jesus Rivera, MSL, Linda Schaake, MLS, Rebecca Rasker, MLS, AHIP

Peggy Edwards, AMS, Dawn Kress, MLS, Andy Ortiz, MLS, Stephanie Shippey, MLS, Margaret Vugrin, MSLS, Robert Nelson, MD & John Griswold, MD
The TTUHSC Survey

**SURVEY:** In order to determine actual numbers of libraries teaching EBM and then grading OSCE EBM performance, the Lubbock Library Faculty sent out a survey to three Library listservs (MEDLIB-L, JISCmail and NNLMSCR) for one month during the summer of 2008.

**RESULTS:** The survey found that 18 of the 33 respondents were involved in teaching EBM skills to medical students. In most contexts (13 respondents), the skills were taught as part of an integrated departmental rotation. Only one library respondent was involved in evaluating the EBM skills of the student through an Objective Structured Clinical Exam (OSCE).

**CONCLUSIONS:** We determined, based upon the small number of responses, that few libraries are teaching EBM skills to Medical Students; only two institutions, TTUHSC Libraries and Indiana University Medical Libraries, are involved in teaching and evaluating EBM skills for the OSCE.*

---

### Is your Library involved in teaching EBM skills to medical students?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>15</td>
</tr>
</tbody>
</table>

### Within what context is EBM taught to medical students at your institution?

<table>
<thead>
<tr>
<th>Context</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>General orientation</td>
<td>1</td>
</tr>
<tr>
<td>As a stand-alone elective course</td>
<td>3</td>
</tr>
<tr>
<td>As an integrated part of a departmental rotation</td>
<td>13</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
</tr>
</tbody>
</table>

### Is your Library involved in evaluating EBM skills through an OSCE?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>32</td>
</tr>
</tbody>
</table>

### Which of the following EBM skills are evaluated? (mark all that apply)

- Formulating a clinical question: 6
- Defining a PICO statement: 4
- Selecting an appropriate database/resource: 5
- Developing an adequate search strategy: 5
- Choosing appropriate info to answer the clinical question: 4
- Appraising resource using critical appraisal techniques: 2
- Applying the evidence to the patient: 2
- Communicating with a standardized patient: 0
- Other: 1

*The large graphs are answers to selected survey questions listed to the left.*
The TTUHSC Amarillo Experience

Use of Standardized Patient in the EBM MSIII Surgery OSCE

Librarian

Student

supplements training of Standardized Patient (SP) for the EBM OSCE ensuring that SP understands clinical scenario

reads clinical scenario

meets with SP, who has come for a 2nd opinion

interviews SP to determine concerns

leaves to formulate clinical question based on PICO format

researches & locates evidence–based articles for SP’s question

returns and explains evidence to SP

leaves consultation room

leaves consultation room

interviews student using EBM evaluation form

provides student feedback on d performance

librarian and SP complete “Communications Skills Checklist”
The TTUHSC El Paso & Lubbock Experience

ASK
The Well-Built Clinical Question
PICO
• Patient
• Intervention
• Comparison
• Outcome

PATIENT

ACQUIRE
The Literature Search
• Select the resource(s)
• Formulate the strategy
• Conduct the research

APPLY RESULTS
• Integrate the evidence with Clinical Expertise
• Discuss the evidence with the Patient

ASSESS RESULTS

APPRAISE
Review the Search Results
Evaluate Evidence
• Validity
• Currency
• Applicability
• Useful / usable
• Level of Evidence

Therapy, Diagnosis, Etiology
Prognosis, Costs / Economics
# SCHOOL OF MEDICINE  
Department of Surgery - Amarillo

## OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE)  
Amarillo Case #27  
(Modified 03/06)

**Patient Evaluation of Student Performance**

**Student Name:** ________________________________

**Date:** ______________________________________

<table>
<thead>
<tr>
<th>The Student:</th>
<th>Did not perform (0)</th>
<th>Partially perform (1/2)</th>
<th>Performs well (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Introduced self in a friendly manner.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  Kept good eye contact (note taking is o.k.).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3  Used speech and language which you understood.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4  Asked open ended questions in a logical sequence.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5  Listened well and restated your comments to ensure understanding.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6  Was respectful to you, your gender and culture.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7  Made you feel comfortable with both their verbal and nonverbal communication.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8  Allowed you to ask questions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9  Responded to your questions respectfully and adequately.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Provided you with a definite opinion at the end of the visit.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Overall Communication and Interaction (check one box)**

<table>
<thead>
<tr>
<th>Poor</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>&gt;</th>
<th>Superior</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1/2</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from: UIC-COM Basic Interpersonal and Communication Skills Rating Scale.  
The Clinical Performance Center. Dept. of Medical Education. University of Illinois at Chicago, College of Medicine.
TTUHSC Department of Surgery, Amarillo
Objective Structured Clinical Examination (OSCE)
EBM Evaluation
October, 2008

**ASK**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>10 pts.</th>
<th>No</th>
<th>0 pts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student formulated a Clinical Question before starting the literature search.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Question:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student formulated a PICO statement before starting the literature search.</td>
<td>Yes</td>
<td>10 pts.</td>
<td>No</td>
<td>0 pts.</td>
</tr>
<tr>
<td>PICO elements:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ACQUIRE**

<table>
<thead>
<tr>
<th>Database</th>
<th>Ovid EBMR</th>
<th>10 pts.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PubMed</td>
<td>10 pts.</td>
</tr>
<tr>
<td></td>
<td>DynaMed, FirstConsult</td>
<td>8 pts.</td>
</tr>
<tr>
<td></td>
<td>MD Consult</td>
<td>6 pts.</td>
</tr>
<tr>
<td></td>
<td>Book</td>
<td>4 pts.</td>
</tr>
<tr>
<td></td>
<td>Google</td>
<td>0 pts.</td>
</tr>
</tbody>
</table>

Detail the search strategy used:

1. 3 expanded concepts *plus* correct Boolean
   EX: inguinal hernia AND (surgery OR surgical) AND (non-surgical OR nonoperative OR “watchful waiting” OR observation)
   20 pts.
   Student's search strategy:

2. Appropriate strategy (DynaMed/FirstConsult)
   Inguinal hernia / groin hernia
   18 pts.

2. 3 simple concepts *plus* correct Boolean
   EX: inguinal hernia AND surgery AND “watchful waiting”
   15 pts.

3. 2 concepts *plus* correct Boolean
   EX: inguinal hernia AND “watchful waiting”
   10 pt.

4. 2 or 3 concepts, *no* Boolean
   EX: inguinal hernia watchful waiting
   5 pts.

5. Correct use of limits
   RCT/meta-analysis/Trials
   5 pts.

**PICO Worksheet**

Name: _______________________________  Date: __________

Clinical Question:

**Study category:**

therapy   diagnosis   harm   prognosis

**PICO**

Patient, population, or problem being addressed

- What are the characteristics of the patient or population?
- What is the condition or disease?

Intervention being considered which could include:

- exposure, diagnostic test, prognostic factor, therapy, patient perception
- What do you want to do with this patient? Treat, diagnose, observe?
Comparison intervention or exposure

Relevant most often when looking at therapy questions.

What is the alternative to the intervention? Placebo, different drug, surgery?

Outcomes of interest

What are the relevant clinical outcomes of interest to you and your patient?
Morbidity, death, complications?

Focused, Well-Built Question:


## Patient Evaluation of Student Performance

**Student Name:** ______________________________

**Date:** ______________________________

<table>
<thead>
<tr>
<th>The Student:</th>
<th>Did not perform</th>
<th>Partially perform</th>
<th>Performs well</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Introduced self in a friendly manner.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Kept good eye contact (note taking is o.k.).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Used speech and language which you understood.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Asked open ended questions in a logical sequence.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Listened well and restated your comments to ensure understanding.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Was respectful to you, your gender and culture.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Made you feel comfortable with both their verbal and nonverbal communication.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Allowed you to ask questions.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 Responded to your questions respectfully and adequately.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Provided you with a definite opinion at the end of the visit.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Overall Communication and Interaction (check one box)

<table>
<thead>
<tr>
<th>Poor</th>
<th>1/2</th>
<th>1</th>
<th>2</th>
<th>Superior</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from: UIC-COM Basic Interpersonal and Communication Skills Rating Scale. The Clinical Performance Center. Dept. of Medical Education. University of Illinois at Chicago, College of Medicine.