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There are 3 assignments below: two focus on the skills of searching, and the third reinforces the "appraise" step and introduces the "apply" step of EBVM. The assignments follow two sessions (two hours each) of in-class activities to enhance and advance the skills of searching the biomedical literature.

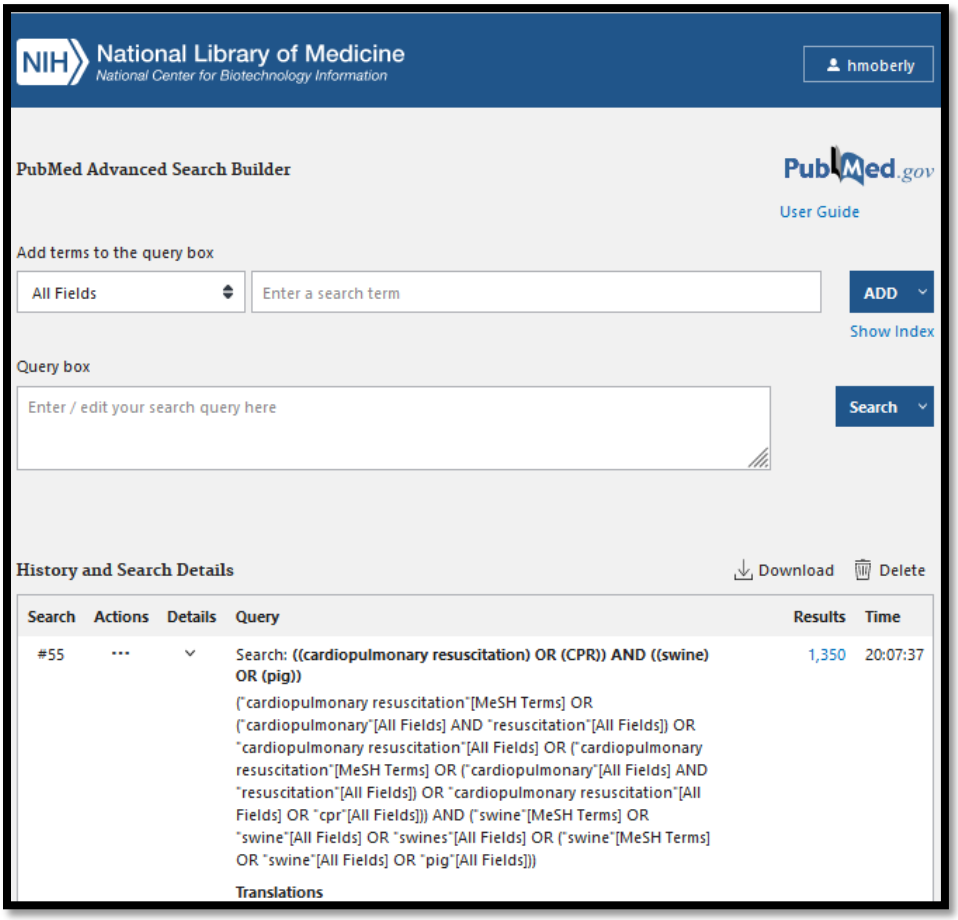
EBVM Assignment - Search #1 – 1VM Spring Semester (2nd semester of 4-year program)
Search for primary literature to answer a clinical question

This is an individual assignment. It is worth 15 points, and the rubric for grading is posted with the assignment. It is due at XXXX on XXXX. To support this, you had a lab session on XXXX. As you have questions, please use the Q&A forum in the Module for this week in Canvas.

Part 1
Begin your search in PubMed. Use the Advanced Search to view the search details, evaluate the PubMed's translation of your search terms, and evaluate the results. Searching is an iterative process, modify your search until you are satisfied.

Supply a screenshot of the Advanced Search with search details showing in PubMed of your most successful search. You do not need to include the Translations portion.

Example:



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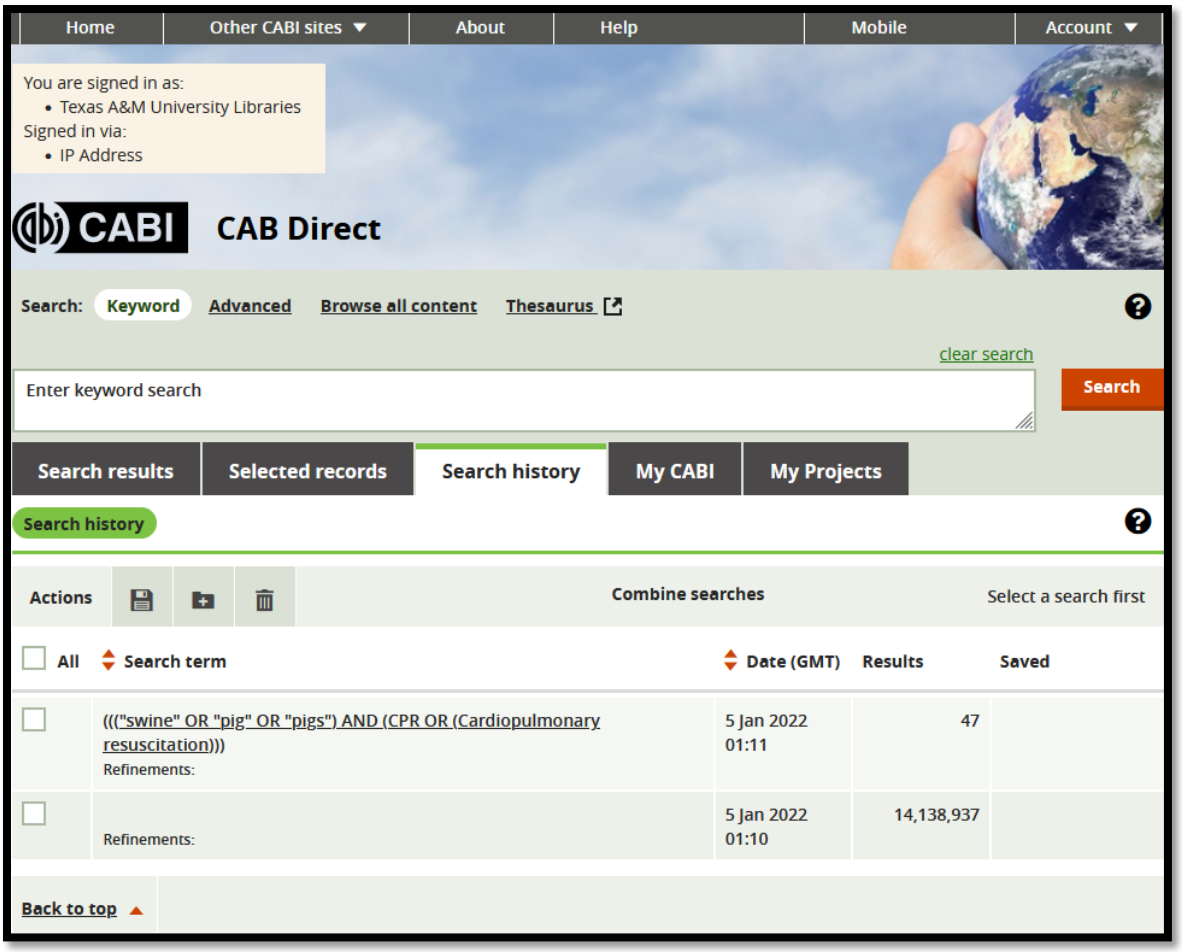
Part 2

Use what you discovered in your PubMed search to inform you search of CAB Abstracts. Use the CAB Direct interface.

Supply a screenshot of CAB Direct the Search History showing your most successful search.



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Part 3

Question: Did you choose to search additional resources? If so, list where you searched.

This question has no correct/incorrect answer as long as you provide an answer. I want to know all the places you searched regardless of if you were successful or unsuccessful.

Part 4

Based on your work for this assignment answer the following two questions. Each response should be 100 words. Look at the grading rubric, you have the flexibility to use 90-110 words.

Reflection 1: What worked well for you as you were developing searches for this assignment and why do you think that was the case?

Reflection 2: What were the most challenging aspects of your searches?

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Rubric for Search #1

COMPONENT	Exemplary	Satisfactory	Needs improvement	Unsatisfactory
Concepts in search [2 pts]	Search included all appropriate concepts AND Included no inappropriate concepts [2 pts]	Search missed one appropriate concept OR included one inappropriate concept [1.5 pt]	Search missed several appropriate concepts OR included several inappropriate concepts [1 pts]	Search missed several appropriate concepts AND included several inappropriate concepts [0 pts]
Search terms [3 pts]	Search included all relevant terms AND no inappropriate terms [3 pts]	Search included most relevant terms AND no inappropriate terms [2 pt]	Search included few relevant terms OR many inappropriate terms [1 pts]	Search included few relevant terms AND many inappropriate terms [0 pts]
Search translation [1.5 pt]	There is evidence of PubMed details informing other searches [1.5 pts]	N/A	N/A	There is no evidence of PubMed details informing other searches [0 pts]
Boolean logic [3 pts]	Boolean terms were included AND used correctly in search [3 pts]	Boolean terms were included AND used mostly correctly in search [2 pt]	Boolean terms were included AND not used correctly in search [1 pts]	Boolean terms were not included in search [0 pts]
Information resources [0.75 pts]	Required resources were searched [0.75 pt]	N/A	N/A	Required resources were not searched [0 pts]
Images [1 pts]	All images were provided AND images were screenshots [1 pts]	N/A	N/A	Not all images were provided OR images were not screenshots [0 pts]
"Where else did you search" [0 or -1 pts]	Provided answer [0 pts]	N/A	N/A	Did not provide answer [subtract 1 pt]
Reflection [3 pts]	Provided response to both prompts AND each was a substantive reflection[1] [3 pts]	Provided response to both prompts AND one was a substantive reflection[1] [2 pts]	Provided response to both prompts AND neither was a substantive reflection[1] [1 pt]	Provided response to only one prompt OR Provided response to neither prompt [0 pts]
Reflection word count [0.75 pts]	Each reflection is 90-110 words [0.75 pts]	N/A	N/A	Either reflection is below 90 words OR above 110 words [0 pts]

[1]Substantive reflections show that you have become aware of why you think what you do, and may include how your thought processes were completely changed; challenging your own assumptions and identifying areas for improvement are also signs of substantive reflection.

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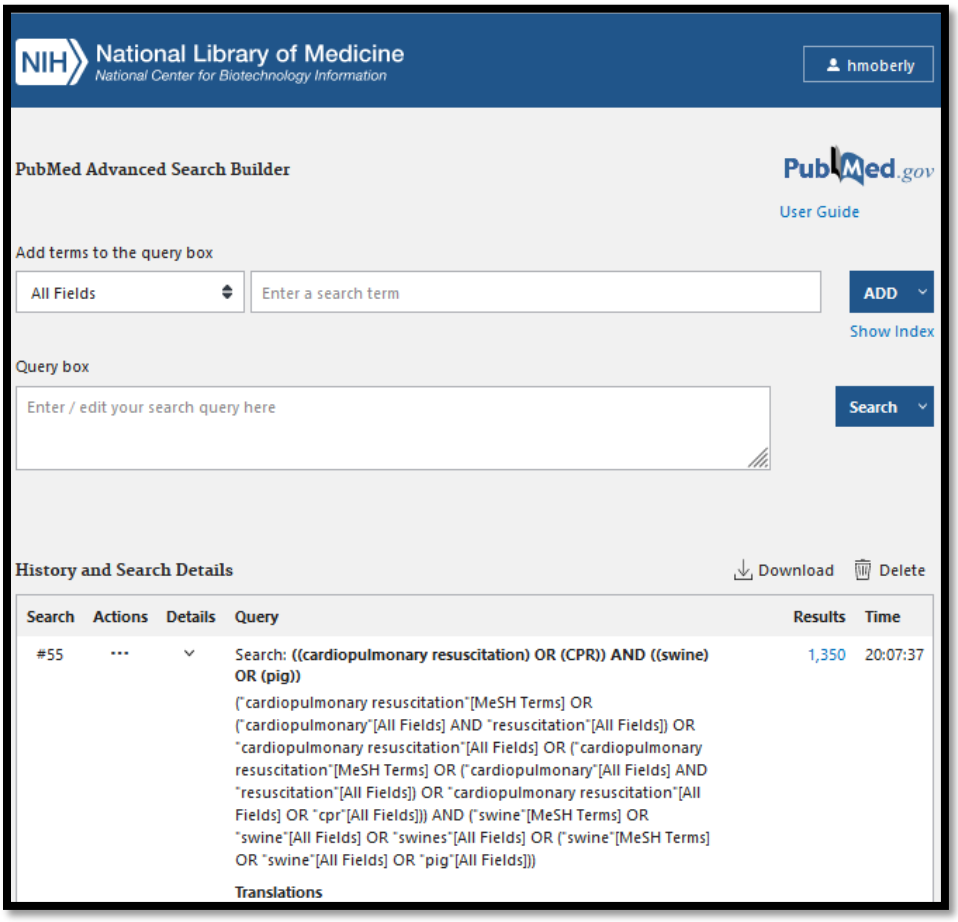
EBVM Assignment – Search #2 – 1VM Spring Semester
Search for primary literature to answer a clinical question

This is an individual assignment. It is worth 15 points, and the rubric for grading is posted with the assignment. It is due at XXXX on XXXX. To support this, you had a lab session on XXXX. To support this, you had lab session on XXXX. As you have questions, please use the Q&A forum in the Module for this week in Canvas.

Part 1
Begin your search in PubMed. Use the Advanced Search to view the search details, evaluate the PubMed's translation of your search terms, and evaluate the results. Searching is an iterative process, modify your search until you are satisfied.

Supply a screenshot of the Advanced Search with search details showing in PubMed of your most successful search. You do not need to include the Translations portion.

Example:



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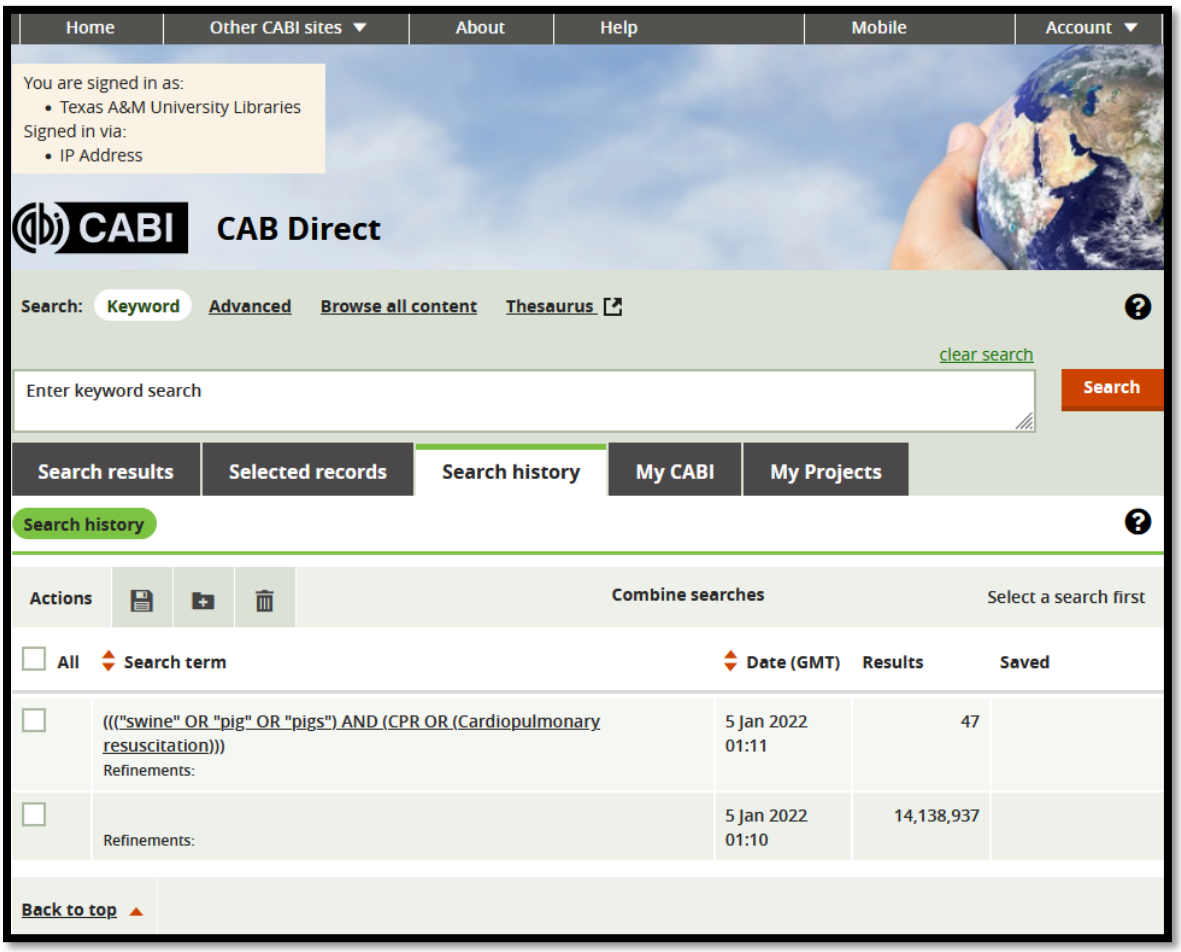
Part 2

Use what you discovered in your PubMed search to inform you search of CAB Abstracts. Use the CAB Direct interface.

Supply a screenshot of CAB Direct the Search History showing your most successful search.



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Part 3

Question: Did you choose to search additional resources? If so, list where you searched.
This question has no correct/incorrect answer as long as you provide an answer. I want to know all the places you searched regardless of if you were successful or unsuccessful.

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Rubric for Search #2 in 1VM Spring

COMPONENT	Exemplary	Satisfactory	Needs improvement	Unsatisfactory
Concepts in search [3 pts]	Search included all appropriate concepts AND Included no inappropriate concepts [3 pts]	Search missed one appropriate concept OR included one inappropriate concept [2 pts]	Search missed several appropriate concepts OR included several inappropriate concepts [1 pts]	Search missed several appropriate concepts AND included several inappropriate concepts [0 pts]
Search terms [4 pts]	Search included all relevant terms AND no inappropriate terms [4 pts]	Search included most relevant terms AND no inappropriate terms [3 pts]	Search included few relevant terms OR many inappropriate terms [2 pts]	Search included few relevant terms AND many inappropriate terms [0 pts]
Search translation [2 pt]	There is evidence of PubMed details informing other searches [2 pts]	N/A	N/A	There is no evidence of PubMed details informing other searches [0 pts]
Boolean logic [4 pts]	Boolean terms were included AND used correctly in search [4 pts]	Boolean terms were included AND used mostly correctly in search [3 pts]	Boolean terms were included AND not used correctly in search [2 pts]	Boolean terms were not included in search [0 pts]
Information resources [1 pts]	Required resources were searched [1 pt]	N/A	N/A	Required resources were not searched [0 pts]
Images [1 pts]	All images were provided AND images were screenshots [1 pt]	N/A	N/A	Not all images were provided OR images were not screenshots [0 pts]
"Where else did you search" [0 or -1 pts]	Provided answer [0 pts]	N/A	N/A	Did not provide answer [subtract 1 pt]
Attendance at librarian meeting after Search 1 [0 or -2 pts]	Attended meeting [0 pts]			Did not attend meeting [-2 pts]

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EBVM Assignment: Answering clinical questions based on evidence

Appraise and Apply

1VM Spring Semester

Typically, you would synthesize evidence from multiple articles to answer a clinical question. However, for the purposes of this part of the EBVM Project, you will only pick one article. You will be working with your group to select a single article. You will identify the study design type, read and appraise the article, and then answer your assigned clinical question (see Canvas for list of assigned questions by group).

Steps of the assignment

1. Meet with your group to talk about what articles you each found, and then select one article that is a **primary** source and **answers** your clinical question.
    a. This choice should include consideration of the study design and therefore the strength of evidence based on the hierarchy on the next page.
    b. I know you have not spent a lot of time learning about study design, so just do the best you can based on the description of each study type in the table.
2. Each group member should read the article, and then the group should communicate about the article and finalize your group response.
3. One group member will submit the assignment form with:
    a. Your appraisal of the article
    b. The answer to the clinical question
    c. The pdf of the article you used.

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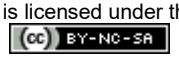
Common types of evidence (study designs)

Studies are sorted based on the potential for risk of bias (lower is better) and strength of evidence (top row = highest)

Evidence Type	Description	Study objectives related to	Primary or Secondary Research	Potential for risk of bias	Ability to assess the risk of bias
Systematic review with meta-analysis	Attempts to identify all relevant literature with specific inclusion and exclusion criteria using a team of authors; qualitatively reviews and summarizes results in a clear and repeatable manner. Meta-analysis then pools and quantifies the data from the literature.	any	Primary	Low	High
Systematic review without meta-analysis	Attempts to identify all relevant literature with specific inclusion and exclusion criteria using a team of authors; qualitatively reviews and summarizes results in a clear and repeatable manner.	any	Primary	Low	High
Large randomized controlled trial (RCT)	At least two groups of individuals are included, one with the treatment of interest and one with placebo or comparison intervention or diagnostic; randomization to group is required; >150 per group	diagnosis, treatment, prevention	Primary	Low	High
Small randomized controlled trial (RCT)	Same as large RCT, with <150 per group	diagnosis, treatment, prevention	Primary	Low	High
Scoping review	Attempts to identify all relevant literature with specific inclusion and exclusion criteria	any	Secondary	Variable	Variable
Study of diagnostic accuracy	Evaluates ability of one or more medical tests to correctly classify participants as having a target condition	diagnosis	Primary	Variable	Variable
Cohort study	Follows a group of individuals over time; comparison is group with different exposure or different treatment. Often prospective but can be retrospective. Can also be called “non-randomized controlled trial.”	treatment, prognosis, prevention	Primary	High	Low
Case-control study	Retrospectively compares outcomes in cases vs controls to find associations with exposures	(diagnosis), prognosis, prevention	Primary	High	Low
Cross-sectional study	Compares individuals with and without disease at a specific moment in time	prevalence	Primary	High	Low
Case series	Reports on the treatment of individuals with the same condition; no control groups	any	Primary	High	Low
Case reports	Very small case series (<5 patients)	any	Primary	High	Low
Narrative review	Description of conditions or treatments by an expert; sources of data are not reviewed or graded; no data pooling performed; literature inclusion and exclusion criteria not specified	any	Secondary	High	Low
Opinion	May be oral or written; usually based on clinical experience	any	N/A	High	Low
Pharmacokinetic studies	Measures drug concentrations in plasma or other tissues	N/A	Primary	Cannot assess	Cannot assess
In vitro studies	Performed on cells or tissues outside of animals	N/A	Primary	Cannot assess	Cannot assess

Version 2022-05 ©Virginia R. Fajt 2022. This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. To view a copy of this license, visit http://creativecommons.org/licenses/by-nc-sa/4.0/ 

Appraise and Apply Assignment – Template (1VM Spring Semester)

What was your Clinical Question?

Why did your group select the article you did?

Critical appraisal of your article:

1. What type of evidence was it? (See the list of evidence types in "EBVM Assignment Part 3 – Instructions" – every article should fit into one of those.)

2. What was the primary objective of the study?

3. Was there a control group?
   - ☐ Yes, a positive control
   - ☐ Yes, a negative (or placebo) control
   - ☐ No

4. Was randomization performed?
   - ☐ Yes
   - ☐ No
   - ☐ Not relevant to the study type

5. Was everyone who made measurements in the study blinded/masked?
   - ☐ Yes
   - ☐ Some were
   - ☐ No

6. Did the trial have an adequate number of animals, e.g., was a sample size or power calculation performed? (Don't get too hung up on having the "right" number – you're looking to see if the number was justified or not.)

7. Was essential information given about the animals, such as breed, age, sex, housing, inclusion criteria, etc.?

8. Were the outcomes of the study described in detail?

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9. Studies of diagnostic accuracy only:
   A gold standard or reference test was compared to the test being studied ☐ Yes ☐ No
   There was an explanation of how positivity cut-offs were established ☐ Yes ☐ No

10. Systematic reviews only: Was the literature search exhaustive and reproducible? Were comparability and publication bias discussed?

What is the answer to your Clinical Question? (Consider that the answer is meant to lead directly to a clinical decision like a recommendation for or against a diagnostic test, a treatment, or another intervention.)

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Rubric for Answer to Clinical Question (Appraise and Apply Assignment)

COMPONENT	Satisfactory	Unsatisfactory
Choice of article [2 pts]	Selected article was a primary source, was on-topic and used a study design that was appropriate to answer your clinical question [2 pts]	Selected article was a secondary source, or was off-topic, or was an inappropriate study design to answer your question [0 pts]
Rationale for choice of article [2 pts]	Reason for selecting the article was included and was rational and defensible [2 pts]	Reason for selecting the article was not included or rationale was not defensible [0 pts]
Study design identification [1 pt]	Study design type was accurately identified [1 pt]	Study design type was not accurately identified [0 pts]
Critical appraisal questions were answered [3 pts]	All questions were answered [3 pts]	Few questions were answered [0 pts]
Clinical question [2 pts]	Answer was provided and reflects the data from the article you reviewed [2 pts]	No answer was provided or answer does not reflect the article reviewed [0 pts]
Copy of article [0 or -1 pt]	pdf of article was included [0 pts]	pdf of article was not included [-1 pt]

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