

Assessing the Search Skills of Incoming Residents: Challenges and Insights

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DOING WHAT'S BEST.



Learning Objective

Understand the successes and challenges of a hospital system in assessing incoming residents on their library searching skills

Introduction

- McLaren Health Care is a 13-hospital system in Michigan with Graduate Medical Education (GME) programs at 6 sites and 5 librarians supporting them
- EPA 7: Form Clinical Questions and Retrieve Evidence to Advance Patient Care ^{1,2}
- Assessments in the Literature^{3,4}



EPA 7 Toolkit: Form Clinical Questions and Retrieve Evidence to Advance Patient Care

Outline

- Designing the Assessment
- Administering the Assessment
- Grading the Assessment
- Follow-up and Instruction
- Conclusion and Recommendations

Designing the Assessment

2021 Version

- Separate fields for Topics and Terms?
- What are Search Categories?
- Different meaning of "Summary"?
- Time consuming to find 10 references

You diagnosed this patient with pulmonary embolism by CT Angiogram; now, you would like to treat him with unfractionated heparin. You read previously that low molecular weight heparin can also be used for treatment of pulmonary embolism. You would like to find which is better in the treatment of pulmonary embolism in terms of mortality, cost and side effects.

Please search online to answer the underlined question, state where you searched and what your search strategy you used. Be as specific and comprehensive as you can about which topics, terms, limits, and search categories (fields) you use on your search.

Search Strategy
Website(s) Used
Topic(s)
Term(s)
Limit(s) (if any)
Search Categories (fields)
Summary of Results (please include a list of the top 10 references found with enough information to make it possible for another person to find them)

2022 Version

- Removed "Topics"
- Added Qualifiers
 - No abbreviations
 - Examples under Limits and Search Categories
- Reduced "Summary" to 5 references

You diagnosed this patient with pulmonary embolism by CT Angiogram; now, you would like to treat him with unfractionated heparin. You read previously that low molecular weight heparin can also be used for treatment of pulmonary embolism. You would like to find which is better in the treatment of pulmonary embolism in terms of mortality, cost and side effects.

Please search online to answer the underlined question, state where you searched and what your search strategy you sued. Be as specific and comprehensive as you can about which topics, terms, limits, and search categories (fields) you use on your search.

Search Strategy
Library Resources/Website(s) used:
Keywords/Search Words – no abbreviations:
Limit(s) (if any such as language, dates, article type, age group, etc):
Search categories (fields) (Clinical trials, meta-analysis, randomized controlled trial, review, systematic review):
List one PMID from a relevant article:
Summary of Results (please include a list of the top 5 references found with enough information to make it possible for another person to find them such as what you would find in a bibliography)

2023 version

- Changed to Question Format in SurveyMonkey
- Tried to clarify Limits and Search Categories
- Reduced to 3 references

Clinical Scenario (Script #2):

You diagnosed this patient with pulmonary embolism by CT Angiogram; now, you would like to treat him with unfractionated heparin. You read previously that low molecular weight heparin can also be used for treatment of pulmonary embolism. You would like to find which is better in the treatment of pulmonary embolism in terms of mortality, cost, and side effects.

5. What library resources or websites would you use to answer the question?

6. What keywords would you use to search library resources or websites to answer the question?

Go to one of the sources listed in #5 and use your best keywords from #6 to run a search.

7. What filters (if any) could you use to narrow your search so that you are finding current and readable literature?

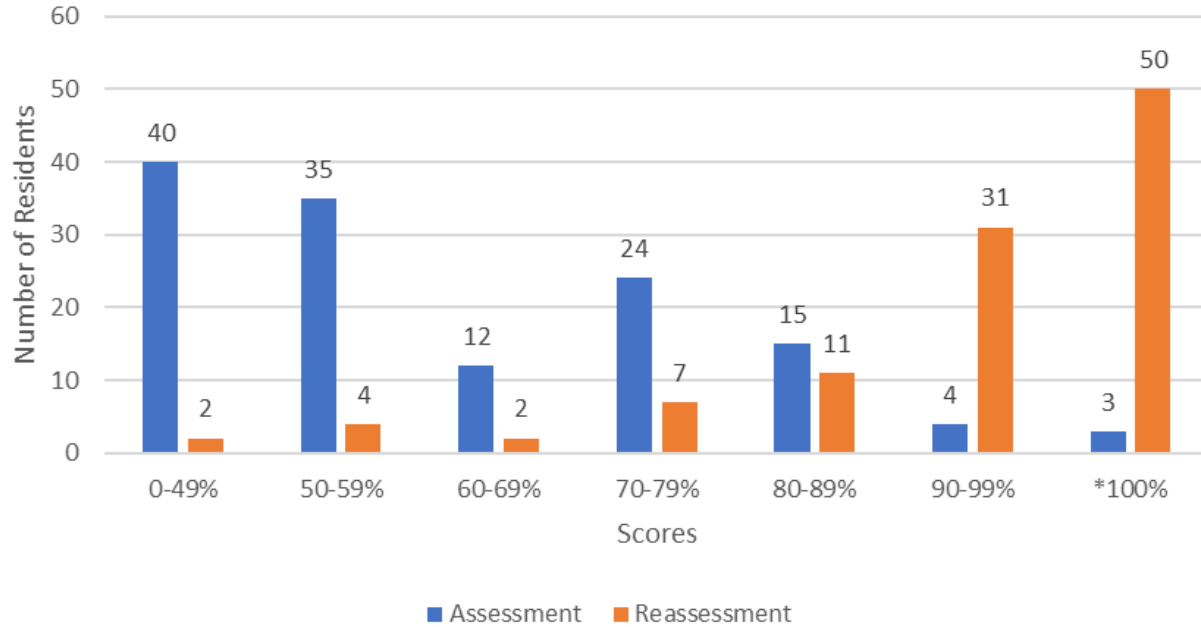
8. What filters (if any) could you use to find the strongest evidence-based medicine?

9. Take a screen shot of your search results or save the search results page as a PDF after putting in your keywords and filters (if any); upload here.

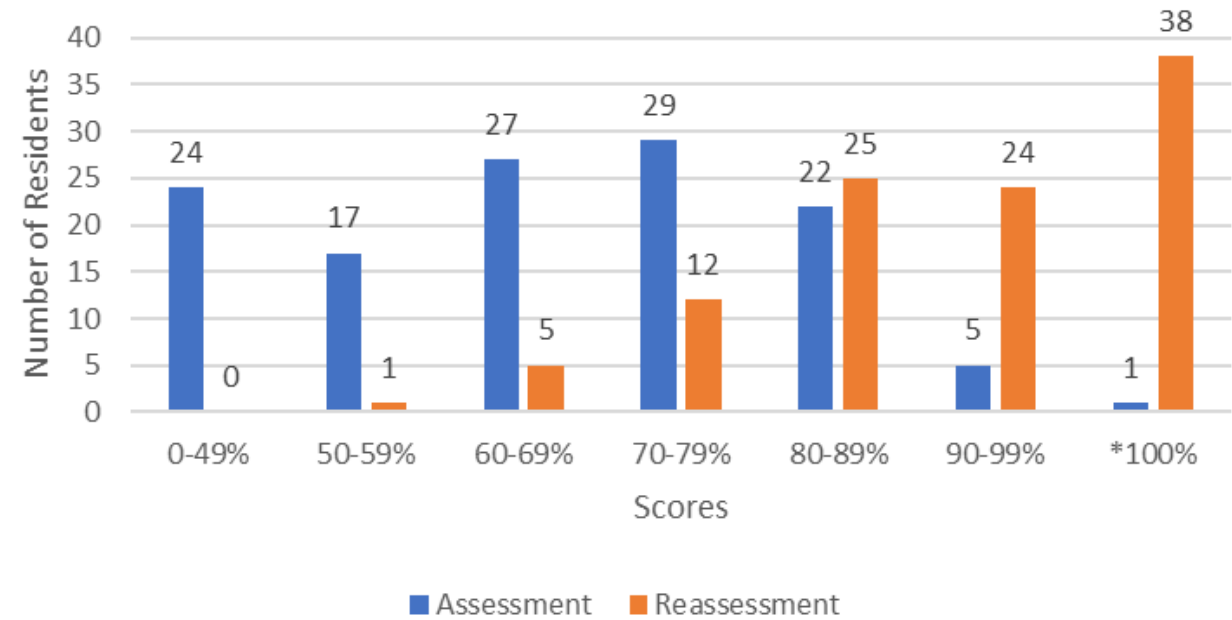
10. Bibliography of Results: List citations, using a consistent style, for the 3 references from your search results that you would choose to answer the clinical question.

11. List one PMID (if available) for one of your 3 chosen references—specify which one (#1, 2, or 3).

2022 Assessment and Reassessment Scores



2023 Assessment and Reassessment Scores



- In 2022, 111 out of 133 (83%) residents scored below 80% on the initial assessment
- After sending out tutorial and rubric, 92 out of 107 (86%) residents scored above 80%

- In 2023, 97 out of 125 (78%) scored below 80% on the initial assessment
- After instruction, 87 out of 105 (83%) scored above 80%

2024 version

- Added questions for PICO and writing a clinical question
- Changed listing keywords to forming a search strategy

5. Identify the PICO elements of the scenario.

Population/Problem

Intervention

Comparison

Outcome

6. Write a Clinical Question for the scenario that incorporates all of the PICO elements.

7. Provide at least one possible search strategy (what you would type in the search bar) for the clinical question that incorporates keywords from the PICO elements and uses Boolean operators (AND/OR/NOT) as needed:

8. What websites or library resources would you use to answer the question?

9. Most databases for literature searching, such as PubMed, allow you to narrow your search. What search filters would you use to limit your search to current, evidence-based, readable studies?

Go to one of the resources you listed in #8 and enter your search strategy (edit as needed).

10. Take a screen shot of your search results or save the search results page as a PDF after putting in your keywords and filters (if any); upload here.

11. Bibliography of Results: List citations, using a consistent style, for the 3 references from your search results that you would choose to answer the clinical question.

12. List one PMID (if available) for one of your 3 chosen references—specify which one (#1, 2, or 3).

Administering the Assessment

2021

Assessment

- Clinical Scenario: Randomly assigned 1 of 6 scripts
- Administered by: Site Librarian
- Script Format: Printed Word Document
- Assessment Location: with Site Librarian

Challenge

- Scheduling for completing the search skills assessment was difficult to arrange.

2022

Assessment

- Clinical Scenario: Script #2
- Assessment Location: Site Orientation **⇐ Solution**

Reassessment

- Reassessment Scenario: Script #6
- Reassessment Format: Fillable PDF **⇐ Solution**

2023

Assessment

- Administered by: Corporate Librarian
- Script Format: SurveyMonkey Link
- Assessment Location: Virtual

Reassessment

- Reassessment Format: SurveyMonkey Link

2024

Pre-Test

Instructional Video

Post-Test

Grading the Assessment

Grading 2021 & 2022

- by corresponding Site Librarian

Challenges

- task was unequal amongst librarians.
- rubric elements

Rubric

6 You are called to evaluate a 36 y/o Hispanic female for possible admission for tetanus. She awoke the prior night with severe positional vertigo and then noted difficulty opening her jaw and muscle spasms in her neck. Eight days earlier she had stepped on a nail in her yard. Her last Td was about 5 years ago. She was seen at a local ER prior to transfer and treated for presumed tetanus. She is the wife of the XO of the base legal office and she and her husband are very interested in knowing what is wrong with her. Can tetanus occur in patients with a history of a primary series and booster <5 years ago

Requirement	Scale	Grade
Use appropriate search terms – points for each appropriate word/phrase up to 4 points; for example: Tetanus, Post Vaccine, Booster, Vaccine	Use 4 terms=4 pts Used 2 terms =2 pts Used 0 terms=0 pts	
<u>Searched Using full terms</u> not abbreviations; for example: Td=Tetanus; ER=Emergency Room, Emergency Department	Used full words all=4 pts Used full words one abbrev.=2 pts Used full words 2 or more abbrev.=0 pts	
Limited to English and years	Used both=4 pts Used one=2 pts Used zero=0 pts	
Limited to EBM using Randomized Control Trials, Meta-Analysis, Practice Guidelines.	Used all=4 pts Used two=2 pts Used zero=0 pts	
Searched in PubMed, Medline Complete, Discovery	4 pts/0 pts	
Knowledge and use of full terms for Studies and medical terms (CHF)	4 pts/0 pts	
Knows what citation is: Create citation on page	2 pts/0 pts	
Can locate PMID: add one from search	2 pts/0 pts	
Total	28	

Passes searching 80% 23 pts +

Reassessment Question 60% 19-24 pts

Needs one on one with librarian at recommendation of Faculty

Print Resident's Name: _____

Resident's Signature: _____ Date: _____

Grading 2023 & Beyond

- by *any MHC Librarian (not site-specific)*
- changes made to rubric

Tester's Name:

Site:

Program:

#5. Identify PICO elements of the scenario

Pre-test grade:

Post-test grade:

		Population	Intervention	Comparison	Outcome
Excellent (4 pts)	Script 2	Pulmonary embolism	Unfractionated Heparin	Low molecular weight heparin	At least one: Mortality, cost, side effects
	Script 4	Pancreatitis	hyperalimentation OR total parenteral nutrition	Enteral Nutrition	Almost anything – improvement of symptoms, mortality, etc.
Strong (3 pts)	3 PICO elements				
Average (2 pts)	2 PICO elements				
Limited (1 pt)	1 PICO element				
Not evident (0 pts)	0 of the PICO elements				

#6. Write a Clinical Question for the scenario that incorporates the PICO elements

Pre-test grade:

Post-test grade:

	Clinical Question includes
Excellent (4 pts)	All 3-4 PICO elements
Average (2 pts)	2 PICO elements
Limited (1 pt)	1 PICO elements
Not evident (0 pts)	None of the PICO elements

Follow-Up / Instruction

Follow Up / Instruction

- 2021: Follow Up Varied by Site
- 2022: Corporate video plus instruction at site orientation
- Residents who scored below 80% received an email with a tutorial, video, rubric for Script 2, and reassessment PDF of script 6
- 2022: Residents who scored below 80% on reassessment needed to schedule instruction with their librarian

Challenge

- Coordinating one-on-one instruction for those who failed was difficult.

Follow Up / Instruction

- 2023: Residents had in-person instruction at corporate orientation
- Residents who scored below 80% received an email with a tutorial, video, rubric for Script 2, and a SurveyMonkey link for reassessment of Script 6.
- Residents who scored below 80% on reassessment needed to schedule instruction with their librarian

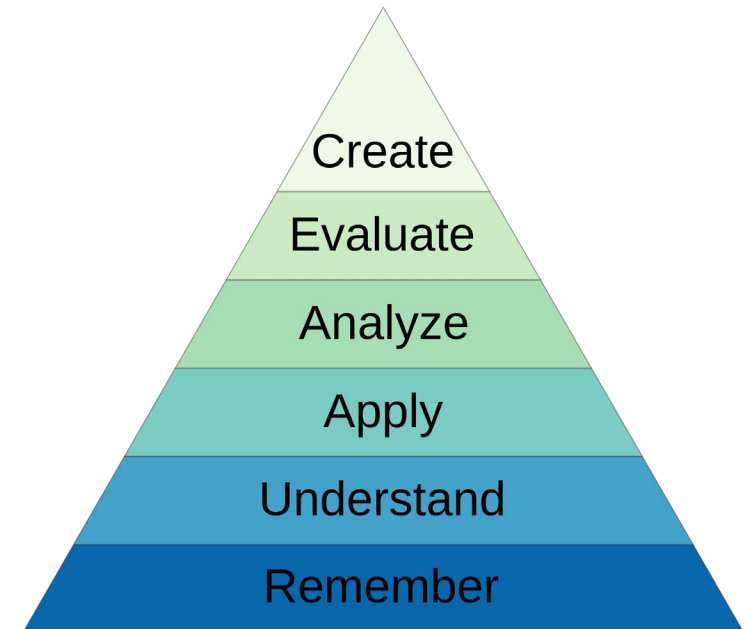
Challenge

- 2023: a Google form for scheduling a time frame

Conclusion / Recommendations

Recommendations

- Have flexible expectations
- Conduct user testing and get feedback
- Incorporate active learning strategies into search skills instruction ^{5,6,7}



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Thank you!