



# Incorporating a Grading Rubric to Evaluate an Evidence Based Medicine Assignment



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## BACKGROUND

- Students complete an evidence based medicine (EBM) assignment as part of their required 4 week emergency medicine clerkship
- The EBM assignment uses standardized clinical cases focusing on the incorporation of validated clinical decision rules / scores
- The EBM exercise has been previously described: *Acad Emerg Med.* 2018;25s291
- In 2018, we identified the need to develop a uniform way of evaluating this assignment for our required rotation

## OBJECTIVE

- We developed a rubric to evaluate the assignment in a more objective approach and provide standardized feedback to the students

## METHODS

- Working with our health science research librarians (JP, NT), we developed a rubric to evaluate the EBM assignment in a more consistent fashion
- The rubric is modeled after our assignment submission and consists of 6 domains, anchors are included to aid in completion

EM Clerkship EBM Rubric				
Student Name:	Case:			
Block #:	Below Expectations	Meets Expectations	Above Expectations	
1	Identifies an article			
2	Describes the importance of the clinical condition			
3	Describes the study methodology			
4	Summarizes the study results			
5	Correctly applies the study results to the case	N	Y	
6	Overall write up			
Overall GRADE				
	1	2	3	4

  

	Below Expectations:	Meets Expectations:	Above Expectations:
1	Identifies an article that is not original research and / or is not applicable to address the clinical question.	Identifies an article that is original research and could be applicable to address the clinical question.	Identifies an article that is both applicable and relevant to address the clinical question. The article describes the application of a clinical decision rule or score that can be appropriately applied to the importance of the clinical condition is described in sufficient detail. In depth background information is provided to place the importance of the clinical condition in perspective.
2	Provides little or insufficient background information about the importance of the clinical condition.	The importance of the clinical condition is described.	The study methodology, including the type of study, population studied, clinical setting, inclusion/exclusion criteria, etc. is described in sufficient detail.
3	Does not adequately describe the study methodology.	The study methodology is adequately described.	The study results (both primary and any secondary outcome measures) are described in sufficient detail.
4	Does not adequately describe the study results.	The study results (primary outcome measures) are described.	
5	Does not correctly apply the study results to answer the question.	Correctly applies the study results to answer the question.	
6	The overall submission is brief, incomplete and / or does not include an adequate discussion of the case, clinical condition and article.	Submits an adequate review of the case, clinical condition and article.	Submits an in-depth, well thoughtout and articulated review of the case, clinical condition and article.

- An overall grade is assigned for each assignment using a 5 point scale
- Written feedback is also provided to the students highlighting each domain

### EBM Submission Format:

- Brief case summary, restate the question you are addressing
- Importance of the clinical condition
- Search strategy
- Article citation
- Why did you choose the article?
- Importance / relevance of study
- Study methodology
- Study results
- How can the results be applied to your case?
- Answer the clinical question

## CASE

A 40 year old male presents to the emergency department about one hour after having a brief syncope episode at home. During your evaluation he is awake, alert and able to answer your questions. The patient reports that while getting ready for work he felt dizzy and the next thing he remembers was his wife leaning over him on the bedroom floor. His wife reports that he saw him collapse and that he was on the bedroom floor for 15-20 seconds before he began to wake up. The patient denied having chest pain, shortness of breath or a headache prior to the event. The patient remembers waking up after collapsing and seems to be back to baseline. Currently he feels a little lightheaded. No seizure like activity was noted by the wife.

PMH: HTN  
 Meds: Amlodipine 5mg daily  
 Allergies: NKDA  
 Social Hx: Smokes cigarettes occasionally, social ETOH use  
 Family Hx: Father with MI at 65, mother with CVA at 66. Both parents are alive, no siblings  
 Exam: HR 88 RR 16 BP 150/90 T 98.1°F SaO2 98% RA  
 GEN: Concerned but well-appearing  
 HEENT: No trauma, PERL  
 CV: Regular rhythm, no murmur  
 Pulm: Clear lung fields bilaterally  
 Abd: Soft, non-tender  
 Neuro: GCS 15, CN intact, motor strong and symmetric, gait steady  
 Ed: No edema or calf tenderness  
 Initial diagnostic testing includes a CBC, BMP an ECG and a chest radiograph.

WBC	8.2	Na	139
Hgb	15.3	K	4.5
Hct	44	Cl	100
BUN	22	BUN	22
Cr	1.0		
Gluc	118		
Ca	8.3		



Question:  
Should this patient be admitted to the hospital?

## RESULTS

- 79 EBM assignments were submitted (75 students, 4 students submitted a 2<sup>nd</sup> assignment)
- Fifty (63%) were evaluated at Above Expectations, (4 or 5 points)
- Twenty one (27%) at Meets Expectations, (3 points)
- Eight (10%) at Below Expectations, (2 points), no assignment received a grade of 1 point
- In five (6%) assignments, students did not correctly apply the study results to answer their question
- Fifty (66%) students completed the post-rotation questionnaire
- Forty nine (98%) reported it was helpful to receive a completed rubric after their assignment was graded
- Thirty nine (78%) felt the grade they received was a fair assessment of their submission
- Written feedback was rated as; excellent, 30%; very good, 38%; 18%-good, 12%-fair, 2%-poor
- Forty five (88%) reviewed the rubric before completing their assignment
- All five students who did not review the rubric before completing their assignment reported the grade they received was a fair assessment

## CONCLUSIONS

- The rubric was easily applied to evaluate the assignments, allowed for more standardized feedback to the students
- Although not validated, can be a useful tool
- Most students felt it was helpful to receive a completed rubric for their assignment