Milestones of Observable Behaviors for Clinical Reasoning Course

1. Identifies, collects, and utilizes the pertinent information of a clinical case (MK). *This item focuses on the student organizing his/her information and thinking.*

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level. Restates case information with little or no interpretation. Requests little or no additional information, or gives no rationale for request, "data grab." Omits pertinent information.	Restates case information in a way that captures pertinent clinical facts. Requests additional data with some rationale.	Begins to use semantic qualifiers to present case information. Distinguishes normal from abnormal findings. Identifies relevant negative findings. Identifies emergent conditions and concerns. Requests pertinent data with clear and logical rationale.	Defines problem clearly by using appropriate semantic qualifiers and identifying pertinent positives and negatives. Organizes data and identifies key finding or constellation of findings. Omits irrelevant information. Requests for data are comprehensive, essential, and prioritized by context. Rationales are explained clearly and succinctly.
☐	☐	☐ ☐	☐ ☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Collects important data, including pertinent positive and negatives, in a systematic and efficient manner. Analyzes this data, synthesizes it into a focused problem list, and identifies key finding or constellation of findings. Presents this information in a clear, concise, organized format.

2. Develops and prioritizes hypotheses related to clinical diagnosis (MK).

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level. Hypotheses are not grounded in reasonable rationales. Perseverates on hypotheses despite contradictory evidence.	Lists at least 3 hypotheses with relevant rationales, even if rationales are basic.	Develops multiple working hypotheses, articulates reasoning using relevant basic science/explanations. Reconsiders differential diagnoses after receiving new case information, integrates new key features into reasoning.	Prioritizes multiple working hypotheses and articulates clear rationale for the rank ordering of the hypotheses. Includes an explicit statement about how well each hypothesis fits this patient and discusses reasoning of low likelihood hypotheses. Identifies case information that doesn't fit a given hypothesis. Develops diagnostic strategy to rule in or rule out hypotheses.
☐	☐	☐ ☐	☐ ☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Uses key features and problem list to develop prioritized, realistically plausible differential diagnoses using a systematic approach. Uses new information and data to reprioritize, reconsider, and develop new hypotheses. Considers "must not miss" diagnoses as well as most common or likely diagnoses. Uses basic science principles, knowledge of likelihood of diagnoses, and test characteristics to develop organized diagnostic strategy to confirm or dismiss differential diagnoses.

3. Provides constructive feedback to peers (IPS).

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level. Does not provide feedback to peers in group sessions or through ThinkShare entries or comments.	Comments on peer entries in ThinkShare or peer ideas during group sessions, but does not go beyond evaluative remarks, such as "nice job."	Provides constructive comments regarding group ideas or process in ThinkShare or during group sessions. Comments address the group process or functioning by describing specific, observable behaviors, approaches, or dynamics.	Provides constructive feedback to individual peers in ThinkShare or during group sessions, such as explaining what they thought their peer did well or identifying possible errors, posing questions about peer approaches to problem-solving, contributions to group, etc. Feedback includes strategies or suggestions for improvement.
☐	☐	☐	☐	☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Provides actionable feedback to peers that contributes to learning and functioning of team.

4. Participates in group problem-solving process (IPS).

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level. Does not provide input during group sessions. ThinkShare entries do not reflect consideration of peer ideas or approaches.	ThinkShare entries reference peer ideas or approaches. Participates in group problem-solving process (e.g., offers ideas or explanations, serves as a scribe, suggests resources).	ThinkShare entries reference how the student used peer ideas to aid his/her approach to cases. Or student suggests constructive ideas that promote or redirect group discussion, evaluates resources, or begins to take the lead in group discussions.	ThinkShare entries or contributions during group sessions model problem-solving in a clear, thorough, organized, and thoughtful manner. Or during group sessions, consistently suggests ideas that help lead or redirect group discussion without dominating.
☐	☐	☐	☐	☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Participates in problem-solving as a member of the clinical team. Presents ideas in a thoughtful, organized, clear manner.

5. Asks relevant questions and identifies gaps in knowledge needed to solve the case (PLI). *This item is intended to focus on the student identifying and filling gaps in his/her medical knowledge. The scale is based on the frequency of performing the behavior.*

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level.	Occasionally asks relevant questions or identifies gaps in knowledge necessary to solve the case.	Usually asks relevant questions about the case and identifies gaps in knowledge.	Almost always asks relevant questions and identifies gaps in knowledge needed to solve the case.
☐	☐	☐	☐	☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Routinely identifies gaps in medical knowledge and performs self-directed research to find the information. Evaluates new information in context of clinical problem and utilizes information to develop plan of care and treatment. Incorporates new information into knowledge base and uses this when approaching future similar problems.

6. Uses and properly cites high-quality sources for research (PLI). *This scale is intended to combine the frequency and accuracy of citing sources and the strength of the sources used.*

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level.	Sometimes provides proper citation of sources. Sometimes uses sources commonly accepted in academic medicine.	Usually provides proper citation of sources. Usually uses sources commonly accepted in academic medicine.	Almost always provides proper citation of sources. Almost always uses sources commonly accepted in academic medicine.
☐	☐	☐	☐	☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Uses multiple sources for research and is able to perform focused and efficient search for information. Can evaluate sources regarding strength of study, application to current clinical problem, etc.

7. Reflects on his/her reasoning process and strategizes to improve it (PLI). *This scale is based on both the frequency of one aspect of the behavior and the acquisition of a new, second skill for the behavior. It is intended to focus on the student's comments or reflections on his/her reasoning process and not comments on case content or the student's medical knowledge.*

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level.	Sometimes comments on strengths/weaknesses of his/her reasoning or approach to case.	Usually comments on strengths/weaknesses of his/her reasoning or approach to case. Sometimes outlines a specific strategy for improving his/her reasoning process and evaluates its effectiveness.	Almost always comments on strengths/weaknesses of his/her reasoning or approach to case. Often outlines a specific strategy for improving his/her reasoning process and evaluates its effectiveness.
☐	☐	☐	☐	☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Routinely performs self-directed reflection on academic and clinical performance. Identifies strengths and weaknesses and develops strategy to improve performance. Implements strategy in future situations and reflects on effectiveness of this strategy.

8. Acts upon feedback from facilitator and peers (PRO). *This scale is based on how quickly and how often the student responds to explicit or implicit feedback. Note: Students are required to participate in the scheduled formative-feedback meetings with facilitators. Failure to attend those sessions would be an attendance issue and should not be included in this assessment survey. This item focuses on the student's response to feedback.*

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level.	Promptly acts upon explicit feedback or input from facilitator.	Sometimes or eventually acts upon implied or non-verbal input/feedback from peers or facilitator.	Usually acts promptly upon implied or non-verbal input/feedback from peers or facilitator.
☐	☐	☐	☐	☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Routinely seeks feedback on performance and incorporates feedback into strategies for improved performance or continued strong performance. Maintains situational and social awareness to perceive non-verbal or implied feedback from peers, attending physicians, and patients and acts upon feedback accordingly to perform as an effective member of the clinical team. Provides feedback to peers and patients in professional manner.

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9. Acknowledges differences of opinion and perspective among group members (PRO). *This scale is based on the quality of performance.*

Pre-Emergent	Emerging (1 point)	Acquiring (2 points)	Mastering (3 points)
Has not achieved the Emerging level.	Acknowledges differences of opinion or perspective among group members, but with some difficulty.	Articulates differences of opinion or perspective among group members.	Models respectful behaviors for others or actively assists group in reconciling differences of opinion or perspective.
☐	☐	☐	☐	☐	☐

CLERKSHIP LEVEL (for reference; not expected of pre-clerkship students): Always conducts himself/herself in manner that respects all members of clinical team and patients.

☐ **YES** ☐ **NO** **This student submitted ThinkShare entries for all steps of all cases.**

☐ **YES** ☐ **NO** **This student met with the facilitator for individual, in-person formative feedback.**

Please provide written comments about this student's performance during this assessment period: