Teaching Clinical Reasoning: An Innovative Approach!
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Background
- Clinical reasoning is a core skill of the successful clinician.
- Reasoning transpires largely at the subconscious level: as a clinician gains experience, articulation of the steps in his/her thought process becomes more difficult.

The Challenge
- Provide a mechanism for residents to experience first-hand the reasoning of an experienced clinician
- Further develop skills of clinical reasoning of residents

Goals/Objective
- Make thought process of a master clinician more transparent
- Highlight intricacies of the diagnostic process
- Help learners better understand how experienced clinicians formulate complex clinical decisions: combining prior experiences with evidence-based knowledge
- Teach process of progressive problem solving
- Outline cognitive steps leading to success in eliciting, framing and then solving medical problems.

Initiative
- Monthly clinical reasoning sessions for all Internal Medicine residents
- “Unknown” clinical case presented in short segments to expert clinician
- Clinician verbalizes his/her thought process as case unfolds, teaching process of progressive problem-solving to learners
- Learners gain insight into the thought process being used
- Teaching points and wrap-up provided
- Session ends with a completion of brief survey

Results

| Percent of R1s and R2/R3s choosing “agree” and “strongly agree” to survey questions |
|---------------------------------|----------------|----------------|----------------|----------------|
|                                  | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 |
| Q1. My Initial hypothesis agreed with the discussants | 80% | 70% | 90% | 75% | 85% | 90% | 75% |
| Q2. My prioritized differential diagnosis agreed with the discussants | 65% | 70% | 75% | 80% | 85% | 80% | 70% |
| Q3. Session taught the process of refining differential diagnosis | 70% | 65% | 75% | 70% | 80% | 75% | 65% |
| Q4. I was able to follow the reasoning offered by the discussants | 60% | 65% | 70% | 75% | 80% | 85% | 75% |
| Q5. The session will likely change the way I approach clinical problems solving | 70% | 75% | 80% | 85% | 90% | 85% | 80% |
| Q6. I felt comfortable voicing my opinion during case discussion | 80% | 85% | 90% | 95% | 100% | 95% | 90% |
| Q7. I felt engaged in the diagnostic reasoning process | 80% | 90% | 95% | 100% | 95% | 90% | 85% |

Comments from Learners

- “It is helpful to think out loud... I jump to conclusions too fast... need to think about differential diagnosis”
- “learned about prioritized differential diagnosis. Helped me reason better”
- “Think broadly... avoid premature closure”
- “learned the importance of focused physical”
- “Refining of diagnosis as more information is available”
- “Helped me reflect on my thought process”

Conclusions

- Clinical reasoning session is a valuable tool to teach and learn the process of:
  - Hypothesis generation (elicit right question)
  - Problem representation (develop problem list)
  - Prioritizing differential diagnoses
  - Problem-solving strategies (pattern recognition, analytical reasoning)
- Senior residents rated their ability to perform elements of clinical reasoning higher compared to R1s

Lessons Learned

- To further engage the residents, we piloted a team-based learning approach:
  - Initial data from 2 sessions (n=51) revealed 76% of residents thought discussions in small groups further helped refine their differential diagnoses
  - Majority of participants (88%) were very comfortable sharing their clinical reasoning process within small groups