Clinical reasoning is defined as the ability to assign an accurate diagnosis and develop an appropriate treatment strategy. Despite the fact that one third of medical errors are cognitive in nature, the focus on cognitive errors has been limited. In an era of patient safety, the medical community needs curricula that promote this integral skill that goes beyond medical knowledge. Despite the lack of an accepted common nomenclature for clinical reasoning, most educators agree that the dual process thinking model, heuristics, and biases are key to this process. Curricula that promote clinical reasoning remain lacking from most residency programs.

Nearly 30 successful conferences have been held thus far. This conference is universally celebrated as the most popular conference of the program. Preliminary sampling of qualitative data gathered through residents’ reflections points towards processes and behaviors indicative of transformational learning. Reflections comment on:

- Clinical reasoning lexicon becoming part of daily rounding
- Conscious and deliberate evaluation of the thinking processes and cognitive biases while in actual patient care scenarios
- Culture change within the residency program where discussing cognitive errors is the new norm.

In depth data evaluation is being carried via thematic analysis. This will be followed by surveys and resident focus groups to triangulate the data.

Clinical reasoning is an extremely important construct that medical education has failed to attend to over the years. Our innovation tries to introduce the concepts of clinical reasoning into the residency world. It facilitates discussion around cognitive biases and errors and introduces this lexicon in a pressure free, fun and interactive manner. Residents appear to appreciate using metacognition to reflect on their thinking and uncover its inherent biases. As this intervention falls under transformational learning, a safe learning environment that allows for in depth reflection is of paramount importance. Trained faculty with good teaching and listening skills, along with smaller groups is a must for the success of the program.

**Program Objectives**

- Utilizing metacognition as its framework, our program aims at improving clinical and diagnostic reasoning capacity among internal medicine residents.
- Grounded in transformational learning theory, residents will consciously evaluate, analyze and reflect on their subconscious thought processes and cognitive biases that shape our reasoning strategies.
- We hypothesize that making conscious to trainees the unconscious thought processes and biases will hone their reasoning and diagnostic skills and ultimately decrease cognitive errors.

**Description of Innovation**

Our intervention consists of a recurring interactive case based conference with 25-30 residents divided small groups. The conference is made of seven segments:

1. Brief case presentation
2. Small groups activity to formulate a ‘reflex’ initial diagnosis
3. Large group debriefing utilizing “thinking aloud” technique to highlight thought processes and cognitive shortcuts involved in the initial diagnosis (Availability, Gestalt, Representativeness…)
4. Small group activity in which groups evaluate the case through ordering diagnostic tests until a final diagnosis is reached.
5. Large group discussion reflecting on the thought processes behind the evaluation strategy.
6. Small group brainstorming activity to complete an Ishikawa diagram where the spikes represent cognitive biases noted in the case.
7. Large group debriefing and questions wrap up the session.

**Results to Date**

- Nearly 30 successful conferences have been held thus far. This conference is universally celebrated as the most popular conference of the program.
- Preliminary sampling of qualitative data gathered through residents’ reflections points towards processes and behaviors indicative of transformational learning.
- Reflections comment on:
  - Clinical reasoning lexicon becoming part of daily rounding
  - Conscious and deliberate evaluation of the thinking processes and cognitive biases while in actual patient care scenarios
  - Culture change within the residency program where discussing cognitive errors is the new norm.
- In depth data evaluation is being carried via thematic analysis. This will be followed by surveys and resident focus groups to triangulate the data.

**Discussion, Reflections and Lessons Learned**

- Clinical reasoning is an extremely important construct that medical education has failed to attend to over the years.
- Our innovation tries to introduce the concepts of clinical reasoning into the residency world. It facilitates discussion around cognitive biases and errors and introduces this lexicon in a pressure free, fun and interactive manner.
- Residents appear to appreciate using metacognition to reflect on their thinking and uncover its inherent biases.
- As this intervention falls under transformational learning, a safe learning environment that allows for in depth reflection is of paramount importance.
- Trained faculty with good teaching and listening skills, along with smaller groups is a must for the success of the program.

**References**