MMMD Workshops
Clinical Decision-Making Workshop and Skill-based Workshops

RATIONALE
In the last few years we have been looking for ways to improve the learning experience of seminars in MMMD. Interviews with students and faculty enabled us to develop a new approach to this small group learning, that we have called workshops. As this process evolved, we could see the value of the sessions in helping students to develop clinical decision-making skills and to apply learning from lectures to develop an approach to common clinical problems that will be encountered in clerkship. The course administration, with the support of the pre-clerkship committee, felt that these sessions should be mandatory, to help students better prepare for clerkship and clinical practice.

One of the keys to creating a successful learning environment, is ensuring alignment between student and faculty expectations, and this is the basis for the following document.

Our evaluation process will be aligned with the principles for workshop design and faculty roles, and will be an iterative process.

1. PURPOSE
The purpose of these mandatory MMMD workshops is to provide active learning opportunities for medical students to practice applying their knowledge and skills to variety of clinical cases, reinforce what was covered in the lecture, and to build their clinical decision making skills.

Workshop objectives should reflect the focus of the clinical decision-making approach, help students develop an approach or scaffold for approaching clinical problems, and provide opportunity for clinical application with focus on readiness for clerkship.

2. TASKS
A. Tasks for students to engage in within MMMD Workshops

Clinical Decision Making Workshops:
1. Analyze a specific clinical presentation.
2. Ask the appropriate questions on history to see if a familiar pattern can be recognized.
3. Generate a logical differential diagnosis (and perhaps a working diagnosis).
4. Use data from the physical examination and appropriate investigations to narrow down the differential diagnosis to the point that appropriate management can be provided.
5. Recognize clinical presentations and contexts that have the potential for very serious conditions and be able to explain the appropriate means to rule in or out these possibilities.
6. Explain what would be appropriate communication about the situation to the patient and family.
**Skills-based Workshops:**
1. Within a clinical context learn and practice a specific clinical skill.
2. Explain what would be appropriate communication about the situation to the patient and family.

**B. Faculty tasks**
The focus of the content of the workshops should be on developing principles for general clinical practice, physician’s roles, creating scaffolding for students, applications, and problem solving. Avoid repetition of the lecture materials - focus on application and key concepts but not repeat what was done elsewhere.

**Create relevance for students**
- Choose relevant and common topics and design the session to help make the discussion practical. Ensure that students can see the relevance by relating discussion to typical cases within your own practice or what the students may expect to see in clerkship. Explain that the case represents something you see often, common problem in clinical medicine – show relevance multiple times.

**Selecting and Designing the Cases**
- Select cases or clinical scenarios that are typical presentation common in practice or scenarios that represent life-threatening emergency or situations with severe consequences that medical students need to learn to recognize and manage (even if these are less common).
- Select cases that provide exposure to different clinical context – increasing complexity of cases that require integration.
- Design the cases to allow student to address different aspect of clinical decision making process such as generating an appropriate differential diagnosis; teasing out useful clues in the history or physical exam to generate a working diagnosis; using different investigations to support one diagnosis or another and reviewing the operating characteristics of those tests; managing the practical aspects of carrying out these activities in settings such as the wards, emergency department or ambulatory setting and how to communicate information to patients and families.
- Design some cases that may require students to synthesize and integrate all of the above, and stimulate clinical reasoning at a more advanced level.
- Use one large case and few small cases and/or “What if scenarios”.
- During case discussions bring extra clinical pearls to help bring the case to life.

**For skills based workshops**
- Deconstruct the “skill(s)” into separate learnable components and then integrate these back together to facilitate practice of the “skill” to develop competence in that skill

3. **GUIDELINES FOR DEVELOPING AND FACILITATING WORKSHOPS**
   1. Case or clinical scenario-based interactive group discussions.
   2. Students can do this work in small groups or as a large group, with appropriate facilitation.
   3. **Avoid or limit use of powerpoint slides.**
4. Avoid putting answers in student syllabus or posting answers- what is important is the process going on in the classroom

5. Role of students:
   o Be actively involved in doing the work and engage in active learning. Students need to work to develop their answers within the workshops.
   o This requires that students come prepared. They need to understand relevant information coming into these sessions so they can practice the application of knowledge within the workshop.

6. Role of Faculty:
   o Stimulate discussion.
   o Probe for understanding.
   o Role model own clinical reasoning and clinical decision making process
   o Provide examples of clinical approaches and scaffolding upon which students can build their knowledge and develop their clinical decision making skills.
4. FACULTY RESOURCES

Teaching strategies to facilitate development of clinical-decision making and performance of clinical skills\textsuperscript{1,2,3,4}

Learners need assistance to support them as they move from “not knowing” or “not able” to becoming competent and independent. Scaffolding is a term often used to describe a general strategy of breaking down multiple processes into smaller steps or providing learners with examples, cues, prompts, reminders to help them succeed at complex learning tasks. Scaffolding for learning provides a framework and support until learners can, on their own, solve the problems on their own, carry out clinical-decision making, or perform the clinical skill.\textsuperscript{1}

\textbf{Teaching Strategy: Model}\textsuperscript{1,2}

- Carry out the task(s) involved in clinical-decision making or the skill being taught while students listen to your approach or observe you performing the skill.
- Show the total activity or all the steps in the process not merely the individual steps.
- By observing the total activity learners develop a mental model of what the “real thing” looks like.
- Tutors could go through the approach to the case – go through process – discuss what is going on here. It helps if you provide examples that students can imitate.

\textbf{Teaching Strategy: Think out loud}\textsuperscript{2,3,4}

- Make your thinking visible and accessible to the medical learner
- This provides an explicit scaffold to guide students’ thinking and reasoning
- Tutors need to “slow down their own thinking” and “think out loud with the students”
- To make the structure of your thinking visible first identify for yourself the types of knowledge you are using, the cognitive processes you are using, and the connections you make in your mind. For example: Tutors can verbalize their thought process and rationale for the types of questions that they ask during a history, physical examination, in forming a diagnosis, formulating a treatment plan and planning the investigations as you would engage in as you carry out the task within your own practice.
- You can also ask the students to use the think out loud approach during their discussions which will provide insight into the types of questions that are asking, their train of thought, their ability to make connections and form bridges between concepts, their use of prior knowledge and experiential learning to problem solve, and provides you with an assessment of the challenges and difficulties encountered during clinical reasoning and clinical decision making.\textsuperscript{3}
- The main purpose of think out loud approach is for students to gain access to a clinicians thought process.

\textbf{Teaching Strategy: Anticipate difficulties}\textsuperscript{1,2}

- Discuss with learners areas where support is often needed when learning the skill or when engaging in clinical-decision making around a specific clinical scenario.
- Point out where mistakes are likely to occur.
**Teaching Strategy: Break down an activity into small parts**

1. Break down any complex process into smaller steps or provide prompts and cues
2. Highlight important aspects of an approach
3. Provide an outline of the steps involved or the approach

**Teaching Strategy: Use reciprocal teaching**

1. Ask learners to discuss their own approach with peers in order to obtain input and guidance and suggestions

References:


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