Fostering Faculty Teaching of Clinical Reasoning

Authors: Karen Forbes, MD, MEd, FRCPC & Jessica Foulds, MD, FRCPC
Date: 24 September 2019
I do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Je n’ai aucune affiliation (financière ou autre) avec une entreprise pharmaceutique, un fabricant d’appareils médicaux ou un cabinet de communication.
Background

- Teaching and assessment of clinical reasoning (CR) is currently an area of interest in medical education literature.

- Making sense of varied definitions of CR and translating this knowledge to practical teaching strategies was the focus of our faculty development (FD).
Purpose

- Three-part FD workshop series created to provide FOMD members opportunity to:
  - Learn about CR theoretical constructs
  - Explore a repertoire of clinical teaching tools for use in their own setting
  - Learn and share experiences with colleagues
Workshop Series

- Workshop 1: The Fundamentals of Clinical Reasoning
- Workshop 2: Effective Questioning Techniques to Foster Clinical Reasoning
- Workshop 3: Expanding your Toolkit for Teaching and Assessing Clinical Reasoning

Objectives available at end of oral presentation
The Fundamentals of Clinical Reasoning
The Fundamentals of Clinical Reasoning

- Reflections – what is clinical reasoning?
- Defining clinical reasoning
- Cognitive processing
- Model of clinical reasoning in practice
- Problem representations*
- Illness scripts*
- Clinical reasoning matrix*

* directed activity
# Clinical Reasoning Matrix

<table>
<thead>
<tr>
<th>Rank</th>
<th>Potential Diagnosis</th>
<th>Information that speaks <strong>FOR</strong> this diagnosis</th>
<th>Information that speaks <strong>AGAINST</strong> this diagnosis</th>
<th>What further information would you like to know?</th>
</tr>
</thead>
</table>

Effective Questioning Techniques to Foster Clinical Reasoning
The Fundamentals of Clinical Reasoning

- Reflections - why do we question?
- Purpose of questions
- Learning environment
- Analyze & advance questions*
- Socratic questions* [metacognition]
- Specific questioning techniques
- Case discussion, role play*

* directed activity
Expanding your Toolkit for Teaching and Assessing Clinical Reasoning
The Fundamentals of Clinical Reasoning

- Reflections - challenges
- Know your learners
- Stages of learning
- Tools & techniques*
- Bringing workshops together
  - Application to different learners

- Script sort
- Persuade the preceptor
- Clinical reasoning prescription
- One-minute preceptor
- SNAPPS

* directed activity
Results

- Each session given 6 times over 18 month period; total of 18 workshops since Spring 2018
- Workshop 1: n=93; 4.78
- Workshop 2: n=78; 4.72  Overall: 4.77
- Workshop 3: n=75; 4.82
- 77% of participants have completed all 3 workshops to date
Discussion

- Faculty diversity - different challenges
- Small groups, interactive
- Shared experiences
- Timing
- Guided case-based activities
- Resources
- Time!
Future Directions

- Ethnographic study
- Implementation with real clinical environments
  - opportunity for peer consulting
- Follow-up workshop
Take home messages

- Many well received aspects of our workshop series:
  - Case-based activities
  - Interactive
  - Building relationships
  - Networking
  - Shared experiences
- Learn from our participants
Help us improve. Your input matters.

- Download the ICRE App, or
- Go to: www.royalcollege.ca/icre-evaluations to complete the session evaluation.

Aidez-nous à nous améliorer. Votre opinion compte!

- Téléchargez l’application de la CIFR
- Visitez le www.collegeroyal.ca/evaluationscifr afin de remplir une évaluation de la séance.
Appendices
The Fundamentals of Clinical Reasoning

By the end of the workshop, participants will:

- Define clinical reasoning
- Differentiate analytic and non-analytic processing and the context in which each is used
- Implement strategies to guide your learners in organizing their clinical knowledge to develop clinical reasoning
Effective Questioning Techniques to Foster Clinical Reasoning

By the end of this workshop, participants will:

- Describe effective questioning, and how questioning may promote clinical reasoning
- Create effective questions for fostering clinical reasoning in their learners
- Critique questions used in a variety of clinical teaching settings/contexts
Expanding your Toolkit for Teaching and Assessing Clinical Reasoning

By the end of this workshop, participants will:

- Identify challenges to teaching clinical reasoning in busy clinical settings
- Identify methods to address those challenges
- Outline several practical education strategies that clinicians can implement to help learners at different levels develop their clinical reasoning skills
Clinical Reasoning in Practice

- Patient’s story
- Data acquisition
- Accurate ‘problem representation’
- Generation of hypotheses
- Search for and selection of illness scripts
- Working diagnosis

From: Bowen, *NEJM* 2006
Questioning Techniques
# Script Sort

## Features of the Case

<table>
<thead>
<tr>
<th>Possible Diagnoses</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
You have just seen a patient with a chief complaint of ______
You have 20 seconds to persuade the attending physician that you need a _____(test)_____

**OR**
You have 20 seconds to convince them that this patient has _______ like you said you thought it was
One-Minute Preceptor

- Get a commitment
- Probe for supporting evidence
- Teach general rules
- Reinforce what was done right
- Correct mistakes
SNAPPS

- Summarize the relevant history and physical
- Narrow the differential
- Analyze the differential
- Probe the preceptor
- Plan patient management
- Select a learning point based on the case
Clinical Reasoning Prescription

Reasoning Prescription

Learner: Date to be filled:

Chief complaint:
Provisional diagnosis:

What makes me uncertain?

What biases am I at risk for?
Bloom’s Taxonomy
Maslow’s Four Stages of Learning

The four stages of Learning by Maslow

- Unconscious Incompetence
- Conscious Incompetence
- Unconscious Competence
- Conscious Competence