

Developing purposeful interviewing in clinical reasoning skills with undergraduate medical students- an experiential session

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Outline of session

1. Introduction: language, theory and simple approaches to developing clinical reasoning
2. Warm up exercise: what are we using so far in our own setting and what do students struggle with
3. Small group work : Student clerkings
4. Small group work with HYMS students
5. Looking forward...implementing change

Outline of session

1. Introduction: language, theory and simple approaches to developing clinical reasoning 20 minutes
2. Warm up exercise: what are we using so far in our own setting and what do students struggle with 10 minutes with neighbour
3. Small group work. Student clerkings 20minutes groups of 4-6
4. Small group work with real students 30 minutes



Clinical reasoning is: *“the ability to integrate and apply different types of knowledge, to weigh evidence, critically think about arguments and to reflect upon the process used to arrive at a diagnosis”* (Linn et al 2012).

No....they need to think more!

Clinical reasoning is central to every clinician's work; the cognitive processes involved in clinical reasoning lie at the heart of medical practice.



Of course, good clinical reasoning requires a solid knowledge base but students must also develop expertise in applying that knowledge appropriately

Tolerating uncertainty...

- Medicine is not black and white and is often ‘uncertain’
- It can feel very different to the world of right and wrong; (eg exams based upon right or wrong and delivered to a tight marking scheme)
- Clinicians often have to live with compromise- assessing “uncertainty” and creating enough clarity to make decisions in managing the patient
- This isn’t the same as ‘making a diagnosis’ in all cases



How do we make a diagnosis?

Dual Process Theory

Intuition easy 'pattern recognition', pathognomonic presentations and using heuristics



System One thinking

Deliberate analytical approach

Extensive information gathering, and hypothesis generation.

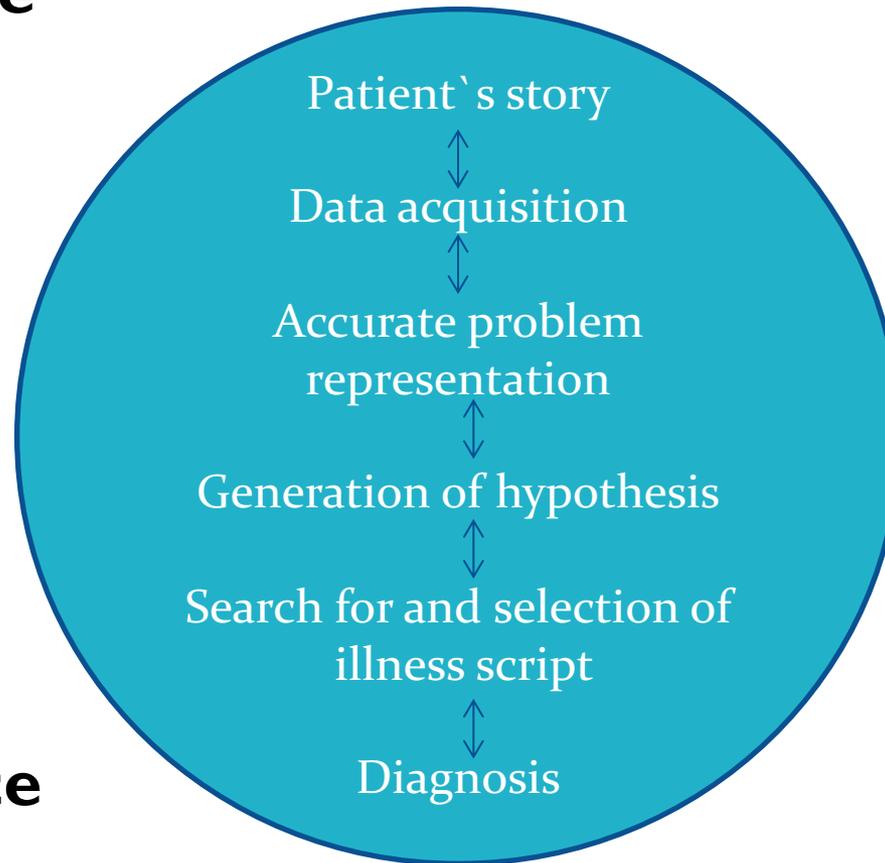
System Two thinking

Making a diagnosis.

Knowledge

Context

Experience



Additional important terms

- **Semantic Qualifiers:** *terms used to narrow or specify the meaning of a sign or symptom, chunking information meaningfully... 'medicalising' it*
- **Cognitive load theory:** *describes the limitations of human cognitive processing*
- **Illness scripts:** *mental representations of clinical symptoms and syndromes typical of different conditions*
- **Deliberate practice:** *sustained active engagement in the relevant components of clinical reasoning with formative feedback to promote learning*

Developing Illness scripts

Epidemiology

Who gets it? Age, gender, risk factors including travel, occupation, pets and activities

Time Course

Onset in hours, days, weeks, months (acute/chronic)
Pattern of symptoms: consistent, episodic, stable, worsening

Pathophysiology

What are the known changes in: Anatomy, physiology, Immunology, Biochemistry, behaviour, genetics etc. Any known environmental contributors eg microbiology, toxins and medications

Presentation

Key presenting features; findings you would see specifically with this disorder and '**rejecting features**', things you would definitely NOT find with this.

Without clinical reasoning, a student:

- Follows recipes: does the same thing every time without necessarily reflecting on its relevance.
- Is dependent on others so 'dumps data' at his seniors' feet for analysis
- Does not have a global approach to interventions or make connections between relevant pieces of clinical information
- Applies treatments without a rationale for choices.
- Asks very few questions or asks endless questions
- Makes mistakes, because he does not take all of the elements into account.
- Does not recognise the impact of environmental factors on thinking and function

Simple approaches.....

- **Encouraging purposeful interviewing** *In marking a student's case presentation or clerking, focus on the reasoning as well as the content*
- **Developing problem lists** *Students should already be familiar with producing problem lists from their early years of medical study. Ensuring they develop these helps them to develop a framework for summarising the patient's state of health clearly.*
- **Encourage students to use scaffolds** *eg Mnemonics such as the surgical sieve especially for junior students*
- **Problem representations and summary statements** *Summary statements mirror illness script frameworks in presenting epidemiological and risk factors, key features described via semantic qualifiers, all presented using medical terminology.*
- **Challenging 'fast' thinking** *Even if the student gets the correct/likely diagnosis, question them about their thinking. Ask 'Why?' and 'Why not?' all the time*
- **'Rule of three' strategy** *This requires students to always come up with three diagnoses which fit the main presenting symptoms and really pursue information, signs or symptoms which either confirm or refute each of these three*

Heuristics and Educational Scaffolds

Encourage students to adopt ways of thinking that simplify their approach

Occam's razor

Sutton's Law

If it looks like a duck.....

Mnemonics like the surgical sieve (help students to extend their thinking especially in the early years)



More specific approaches:

- Stop-start method (Reasoning in action)
- SNAPPS...a six step approach for structuring case presentations
- The one-minute preceptor...five step approach for the clinical setting
- IDEA...scaffold for producing patient summaries

Stop-Start method (reasoning in action)

This approach encourages students to articulate their reasoning in real time

- Group of students interview a patient/simulated patient
- One student (or the tutor) chairs the process stopping the interview at appropriate points
- Students use breaks in the interview to collate information, brainstorm possible diagnoses and decide on direction to take in the interview
- Iterative process of reviewing/including/excluding diagnoses until end of interview
- Summary produced including differential diagnosis with three items, all of which can be justified
- Management plan produced to reflect thinking above

SNAPPS

This is a six step technique for structuring student case presentations:

S ummarise the findings

N arrow the differential diagnosis

A nalyse the differential diagnosis by comparing and contrasting alternatives

P robe the tutor to clarify any uncertainties

P lan management

S elect an area for further learning related to this patient

One minute preceptor

This is a model for tutors to adopt in the clinical setting. There are five steps to this model

- **Get a commitment from the student** ‘So what do you think is going on?’
- **Ask the student for evidence** ‘How did you come to that conclusion?’
- **Provide general rules/pearls of wisdom/diagnostic schema** eg Fever with the breathlessness makes cardiac failure less likely
- **What was done correctly?** Feedback on what the student did correctly and the impact this had
- **Correct** mistakes...and tell the student specifically how to improve next time

IDEA

A scaffold for structuring patient summaries to remind both parties to cover all appropriate ground

Ask the student to cover:

I.....Interpretive summary

D....differential diagnosis with commitment to the most likely option

E....Explanation of rationale

A...Alternatives

What will I do in my own clinical setting to increase my focus on teaching clinical reasoning?