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Advanced Clinical Reasoning

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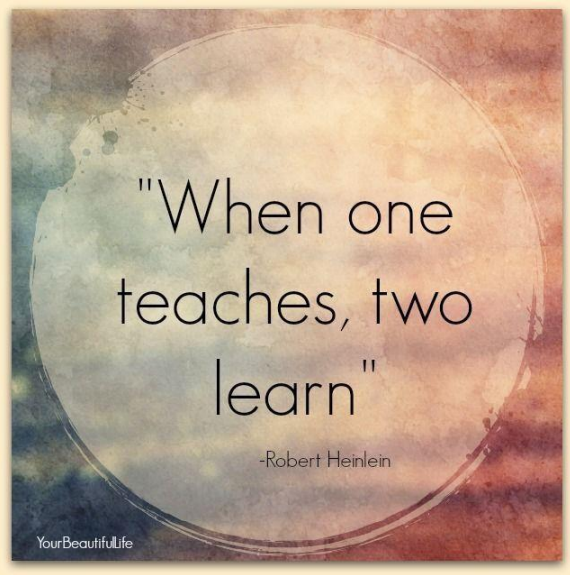
Objectives

- Discuss the relationship between clinical reasoning and evidence based practice
- Identify and compare clinical reasoning characteristics of expert and novice physical therapists as described in research literature.
- Differentiate between deductive and inductive reasoning within the clinical reasoning strategies model
- Accurately identify examples of deductive and inductive reasoning in the context of various clinical reasoning strategies.
- Recognize appropriate application of research evidence into clinical reasoning and clinical decision making
- Analyze examples of clinical reasoning strategies and apply research evidence to clinical decision-making.
- Recognize optimal strategies to facilitate learning from clinical reasoning experiences in practice.

Overview

- Why did you chose to do a residency or fellowship?
- What are some traits of expert clinicians that you aspire to gain?
- What courses will teach you how to become an expert?



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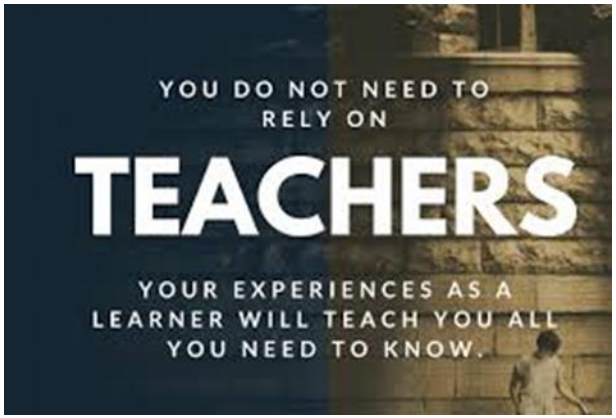

- Exciting to think of how you want to develop yourself and skills.
- Many clinicians think what they need is better manual skills, better techniques, more tools to treat better
- Think of it as studying how the experts become experts and then setting yourself on that path of continuous learning

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Department of Medicine Grand Rounds,
Dr. Gurpreet Dhaliwal, associate professor of **clinical** medicine, UCSF

Clinical Reasoning

- Is a reflective process of inquiry and analysis carried out by a health professional in collaboration with the patient with the aim of understanding the patient, their context, and their clinical problems in order to guide evidenced based practice”(Brooker)

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Challenges with clinical reasoning in current health care system

- Complex environment
- Fast paced
- Clinicians are asked to do more with less time, fewer visits, fewer resources
- Lack of guidance/mentoring

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Expert PT - how do I become one?

- Described as those who have been most effective in learning from their own clinical reasoning experiences in practice.
- Also a key factor with determining how to implement evidence based practice (EBP)

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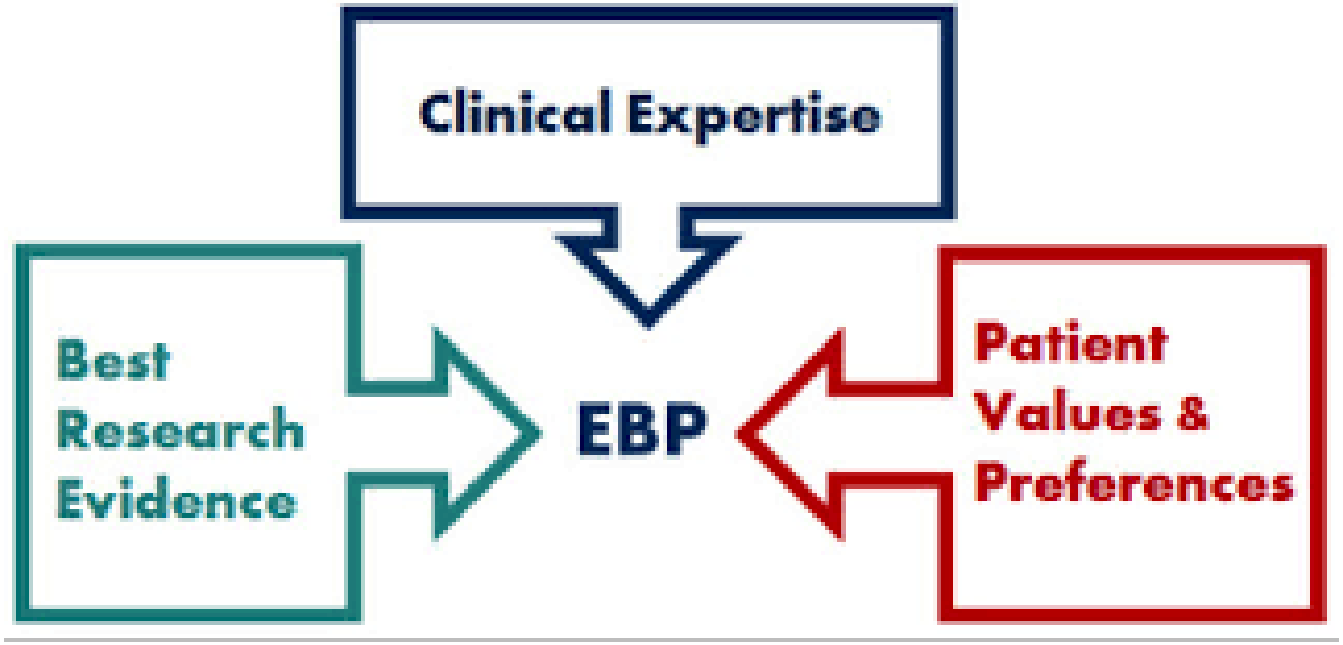
What is EBP?



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Common elements with combining Clinical Reasoning and EBP

- To become an expert one must first acknowledge that these are inter-dependent

- Pitfall - Why might a therapist with excellent manual skills not provide effective care.

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What does excellent clinical reasoning look like in practice

- Collaborative exchange to achieve mutual understanding of the problem
- Patient – centered and situated within biopsychosocial model of health
- Involves deductive and inductive reasoning
- Influences and is influenced by expert's broad base of knowledge
- Complex, non-linear and cyclical
- Plays a critical role in reflective learning from practice experience and is needed to develop expertise

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Traits of novice clinicians

- Therapist centered
- Lacks in collaboration with patient
- Less focus of understanding patient as a person – trying to figure out the diagnosis
- Often adopt a narrower focus of the physical aspects of patient's presentation
- Think of clinical reasoning as deductive linear process
- Good news – this is changeable if you work at developing your clinical reasoning skills

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Clinical Reasoning strategies – Edwards et al

- Looked at experts across all practice settings
- Identified 8 strategies used
- Dynamic manner of utilizing different strategies throughout each session and varied strategies due to patients
- Utilized both inductive and deductive thinking – this is a newer concept with analysis of experts thinking.

Deductive reasoning

- Development of systematic testing of hypothesis and the subsequent ruling in or out of these hypotheses based on the results of the testing.
- Ex – comparing accessory motion vs active mobility tests to assess GH joint
- Hypotheses are judged by considering the results of the questions, tests and measures performed in the examination
- Establishes a cause and effect relationship between variables

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Inductive reasoning

- Does not involve the development or testing of preconceived hypotheses instead looks at understanding the patient's situation and looking from their point of view through communication
- Gained via open ended questioning focused on understanding the patients perception and interpretation
- Minimizes the influence of faulty assumptions of therapist biases on the reasoning process
- Allowing patients to talk – Can you tell me more about your shoulder problem? Vs your MRI shows a RC tear, does the MD want to perform surgery?

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8 Reasoning strategies

1. Diagnostic reasoning

- Deductive –
  - Physical impairments - objective
  - Pathology – what has been found
  - Pain mechanisms – what changes pain
  - Activity restrictions

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2. Narrative reasoning

- Inductive
- Establishing and validating the person who is the patient – their story
- Open ended questions, active listening
- No testing of hypotheses
- Constant exchange with the patient to show that they are understood

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3. Intervention Procedures reasoning

- Both Deductive and inductive
- Choice and administering interventions
- Includes reasoning related to re-examination strategy to determine prognosis

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4. Interactive reasoning

- Both deductive and or inductive
- Choice to approach and manner of interacting – best treatment approach
- How would you treat a 15 year old with a knee injury differently than a 60 year old
- Results in establishing rapport

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5. Collaborative reasoning

- Both deductive and inductive
- Negotiation of working relationship
- Distribution of power in decision making
- Consensual approach to interpretation of examination data, setting and agreed upon goals and choice of intervention strategy

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6. Reasoning about Patient Education

- Both deductive and or inductive
- Thinking of strategies for teaching patients
- Includes effective assessment of whether or not intended learning has occurred
- Question – techniques you use to assess

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7. Predictive reasoning

- Both deductive and or inductive
- Developing a prognosis
- Exploration of various choices for management of case and the implications of those choices
- Worst vs best case scenario

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Ethical Reasoning

- Both Deductive and Inductive
- Recognition and resolution of ethical dilemmas in daily practice.
- Results in “doing the right thing” by taking in all situational variables and constraints

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Errors in clinical reasoning Key Points

- Need to develop an awareness of errors
- Once identified, pitfalls can be addressed
- Errors involve a deficit in critical thinking which facilitates unconscious bias
- Leads to erroneously influencing decision making

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Common deductive clinical reasoning errors in diagnosis and management (Scott, BMJ, 2009)

1) Over-focus on early superficial recognition
2) Premature anchoring
3) Premature closure
4) Framing effect
5) Commission bias
6) Extrapolation error

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Over-focus on early superficial recognition

- Acceptance of the validity of a dx/clinical pattern identification based on superficial similarity to another case

- Example:

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Premature anchoring

- Fixation on first impressions that is unaltered with new or conflicting information

- Example:

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Premature closure

- Acceptance of a diagnosis without challenge through adequate consideration of likely alternatives

- Example:

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Framing effect

- A decision is influenced by the perception of relative risk, whether or not the risk is presented negatively or positively and/or based on a tendency to avoid versus seek risk

- Example:

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Commission bias

- Deciding to do something regardless of evidence that would contradict the decision

- Example:

evidence

evidence

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Extrapolation Error

- Inappropriately choosing to do something that was done successfully in another dissimilar situation

- Example:

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Confirmation and Outcome Bias

Confirmation Bias

Looking for favorites

Focusing on what "fits'

Disregarding info that doesn't "fit"

Omitting tests that would disprove favorite

Outcome Bias

Giving emphasis to using the outcome to **support their clinical reasoning** that determined the intervention

Placing value on their quality of reasoning based on difficulty experienced while making the decision

Giving insufficient consideration to the role of the prognosis on clinical outcomes, rather than attributing outcomes only to **their quality** of clinical reasoning

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Common inductive, narrative clinical reasoning errors (Jones, 2014)

- Superficial psychosocial assessment
  - Downplays personal factors
  - Poor f/u on patients perception of relationship to problem
- Approaching narrative reasoning deductively
  - Makes assumptions
  - Asks closed-ended questions
- Either/or mentality
  - Decides it is a biological/physical problem (deductive reasoning) OR a psychosocial problem (inductive reasoning) instead of considering all aspects of a person

Learning from clinical reasoning

- **What is clinical expertise?**

  Cultivation through an active process of reflection and learning from both clinical success and failures

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Capability in clinical reasoning
(Christensen et al, 2008)

- Confident, effective decision-making and associated actions in practice
- Confidence in the development of a rationale for decisions made
- Confidence in working effectively with others
- Confidence in the ability to navigate unfamiliar circumstances and learn from the experience

Development of clinical patterns

- Critical self-reflection about one's clinical reasoning and outcomes from decisions made in past experiences
- The refinement and expansion of one's practice knowledge
- Organization of memories of past practice that increases with increasing levels of expertise
- The ability to recall a pattern seen before comprised of cluster of both physical and psychosocial aspects of a presentation

Development of clinical patterns

- The development of a clinical pattern 'library' has been linked to increased clinical efficiency!

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3 components of Clinical Reasoning in EBP

1. Research Evidence
2. Clinical Expertise/Experience
3. Patient Preferences and Perspectives

1. Next week = Research Evidence

- How to assess the current research-derived evidence
- Understanding research and combining into a synopsis
- Lastly how to pull relevant research and explain at a patient, caregiver level
- This is a key point with pulling in the interactive, collaborative and teaching as reasoning strategies from earlier.

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2. Clinical Experience

- Using knowledge gained through past experiences that can inform clinical reasoning and applied to other patients
- Application of practice knowledge
- Recognizing when past experience is not relevant or when patterns do not match
- Critical Self reflection –

Richard Steadman

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3. Patient Preference

- Understanding patient's perspectives, desires, beliefs, needs and expectations
- Understanding their level of knowledge of their health, their gaps
- EB practitioner will have the skills to communicate and listen effectively to work to a common understanding and plan
- Example: Patient who has received information from another family member regarding herniated disc

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Ability to integrate all 3

- Finding the balance is paramount
- Critical self reflection
- Confidence
- How to handle conflict with EBP and patient's
- How to work to a compromise
- Reflecting on Therapist's own beliefs

Pitfalls and Error of Clinical Reasoning in EBP

- Over–generalization - Manasi
- Over-valuing a test finding – Mike
- Omission of Quality assessment of literature - Max
- Lack of scrutiny for outcome measure choice - Roy
- Not keeping up with the literature - Zach

Pitfalls and Error of Clinical Reasoning in EBP

- Lack of Confidence - Eric
- Over-valuing clinical experience - Eric
- Inappropriate clinical pattern recognition - Manasi
- Making assumptions about patients - Mike
- Lack of integration of patient's beliefs - Max
- Minimal inclusion of clinical experience/expertise- Roy
- Patient preference dominates - Zach
- Inadequate consideration of current research evidence – Jen/Molly

Facilitating Clinical Reasoning in practice

- Interactive mentoring process
- Needs to be structured and scheduled
- Learner is facilitated to discuss reasoning and self reflection

Pitfall of Mentors

- Often become mentors just due to their clinical abilities – this alone does not prepare them for mentoring
- Mentors often have very little training in how to encourage clinical reasoning and how to assess learners knowledge

Divide into two groups

- Residents – Pattern Recognition
- Fellows – Mentoring and how to facilitate clinical reasoning

Questions??

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